

AD 661033

AD

TECHNICAL REPORT ECOM-65-G10

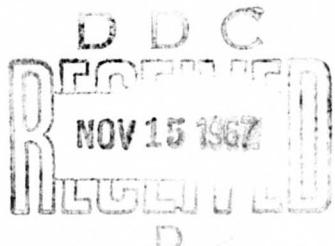
ROUND HILL TURBULENCE MEASUREMENTS
VOLUME I

EXPERIMENTAL TECHNIQUES, DATA-PROCESSING PROCEDURES, AND
DATA TABULATIONS FOR RUNS 87A THROUGH 95A

By
H. E. CRAMER, F. A. RECORD, AND J. E. TILLMAN

DECEMBER 1966

DISTRIBUTION OF THIS
DOCUMENT IS UNLIMITED.



.....
ECOM

UNITED STATES ARMY ELECTRONICS COMMAND
ATMOSPHERIC SCIENCES LABORATORY, RESEARCH DIVISION
FORT HUACHUCA, ARIZONA

GRANT NO. DA-AMC-28-043-65-G10
METEOROLOGY DEPT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASSACHUSETTS

Reproduced by the
CLEARINGHOUSE
for Federal Scientific & Technical
Information Springfield Va. 22151

256

Technical Report ECOM-65-G10

1 December 1966

ROUND HILL TURBULENCE MEASUREMENTS

VOLUME I

Experimental Techniques, Data-Processing Procedures, And
Data Tabulations for Runs 87A through 95A

Grant No. DA-AMC-28-043-65-G10
DA Task No. N0-14501-B53A-08

2123

By

H. E. Cramer, F. A. Record, and J. E. Tillman
Meteorology Department
Massachusetts Institute of Technology
Cambridge, Massachusetts

For

U.S. Army Electronics Command
Atmospheric Sciences Laboratory, Research Division
Fort Huachuca, Arizona

This report was published by the Atmospheric Sciences Research Division at
Fort Huachuca, Arizona under the direction of T. H. Pries.

ABSTRACT

This volume describes the experimental techniques and the data-processing procedures employed in a program of turbulent structure measurements carried out at the Round Hill Field Station. It also contains data summaries for 12 of the 76 field experiments selected for inclusion in this report. The field site and the experimental procedures are described in Section I. Sections II and III respectively contain descriptions of the data-acquisition system and the data-processing procedures. Section IV contains data summaries for Runs 87A through 95A; data summaries for the remaining field experiments are presented in Volumes II, III, IV, and V.

FOREWORD

In December 1958, the research team at the Round Hill Field Station began a program of field measurements and data analysis dealing with characteristic properties of the energy spectra and cospectra associated with turbulent energy exchange processes within the first 100 meters of the atmosphere. The early phases of the work were devoted to the development of suitable instrumentation and experimental techniques and were carried out under Contract No. DA-36-039-SC-80209 with the U. S. Army Electronic Proving Ground at Fort Huachuca, Arizona. The instrumentation comprised a fast-response system for the simultaneous measurement of fluctuations in wind-velocity components and air temperature, and a slow-response system for supporting meteorological measurements. Measurements of the fluctuations in refractive index were also made during several experiments. During the first phase of the field program, approximately 100 experiments were carried out on a 40-m tower located in relatively flat terrain. During the second phase of the program, 32 experiments were carried out on a 91-m tower located in a wooded area. Processing of the fast-response measurements was begun by the Meteorology Department at Fort Huachuca and continued by the Massachusetts Institute of Technology under Grant No. DA-AMC-28-043-65-G10.

The purpose of this series of five volumes is to furnish a comprehensive listing of spectral and cospectral calculations and of supporting meteorological data obtained from 76 selected field experiments. An analysis of much of the experimental data was carried out under Grant No. DA-AMC-36-039-64-G1 and will be published separately in a final report.

Publication of these volumes was carried out by the Atmospheric Sciences Research Division at Fort Huachuca under the direction of Mr. Thomas H. Pries. The authors wish to express their appreciation to Mr. Pries for his assistance in the preparation of this series. They also wish to acknowledge the valuable contributions and support of Mr. J. F. Appleby and Mr. W. D. Ohmstede of the Atmospheric Science Research Division throughout the research program.

The authors wish to acknowledge the important contributions of George Fontes, Harry V. Geary, John E. Luby and James H. Peers of the research team at the Round Hill Field Station to the work described in this volume.

The authors also express their appreciation to Mr. James H. Chisholm, Dr. Lee J. Sullivan and other members of M.I.T. Lincoln Laboratory for their assistance in various phases of the work. The paper-tape decoding program was written by Mr. John Avery with the assistance of Mr. James J. Fitzgerald, Mrs. Marion Andrews and Mr. Peter Hefferman. The latter also ran the decoding program. Mr. John A. Bauer arranged for the loan of the microwave refractometer and Mr. Roy H. Erickson aided in the installation and initial operation of the refractometer at Round Hill.

TABLE OF CONTENTS

| | <u>Page</u> |
|---|---|
| ABSTRACT | ii |
| FOREWORD | iii |
| LIST OF ILLUSTRATIONS | v |
| LIST OF TABLES | vi |
| SECTION I | INTRODUCTION |
| | |
| A. Site Description | 2 |
| B. Summary of Field Experiments | 11 |
| C. Selection of Data for Publication | 12 |
| D. Organization of Volumes | 13 |
| SECTION II | DATA ACQUISITION SYSTEM |
| | |
| A. Introduction | 14 |
| B. Slow-Response Subsystem | 14 |
| C. Fast-Response Subsystem | 16 |
| D. Amplifier-Filter System | 22 |
| SECTION III | DATA PROCESSING |
| | |
| A. Conversion of Raw Binary Data from Paper Tape to Magnetic Tape and Data Editing | 25 |
| B. Scaling and Conversion of Raw Binary Data to Meteorological Units, and Generation of Master Data Files | 27 |
| C. Frequency Distribution, Correlation and Spectral Analysis Programs | 29 |
| D. Mathematical Formulas used in Con- structing the Correlation and Spectral Programs | 30 |
| SECTION IV | DATA TABULATION FOR RUNS 87A THROUGH 95A |
| | |
| A. Vertical Profiles of Mean Wind Speed and Air Temperature | 35 |
| B. Turbulence Statistics | 35 |
| REFERENCES | 246 |

LIST OF ILLUSTRATIONS

| | <u>Page</u> | |
|------------------|---|----|
| Figure 1 | Map showing the location of the Round Hill Field Station | 3 |
| Figure 2 | Roughness elements of the Round Hill Field Site | 4 |
| Figure 3 | View from 40-m level of T_1 . Camera pointed toward 216 deg | 5 |
| Figure 4 | View from 40-m level of T_1 . Camera pointed toward 254 deg | 6 |
| Figure 5 | View from 40-m level of T_1 . Camera pointed toward 294 deg | 7 |
| Figure 6 | View from 40-m level of T_1 . Camera pointed toward 329 deg | 8 |
| Figure 7 | View from 40-m level of T_1 . Camera pointed toward 2 deg | 9 |
| Figure 8 | Aerial view of the Round Hill Field Station showing the location of the two meteorological towers | 10 |
| Figure 9 | Block diagram of basic components of slow-response system at tower T_1 | 17 |
| Figure 10 | Basic components of fast response data-acquisition system for measurement at one tower level. Duplicate system for second level | 18 |
| Figure 11 | Sketch of the revised M.I.T. bivane | 19 |
| Figure 12 | Transmission curves for the amplifier-filter system | 24 |
| Figure 13 | Block diagram of data-processing operations | 26 |

LIST OF TABLES

| | <u>Page</u> |
|---|-------------|
| Table 1 | 20 |
| Table 2 | 31 |
| Correction Factors Applied to Spectral and Co-spectral Estimates to Compensate for Running-Mean Filtering, Sequential Block Averaging, System Response, and Foldover | |
| Table 3 | 36 |
| Table 4 | 37 |
| Table 5 | 40 |
| Adjusted Frequency Bands for Spectral and Co-spectral Estimates | |

SECTION I

INTRODUCTION

Under the sponsorship of the Atmospheric Sciences Research Division at Fort Huachuca, the research team at the Round Hill Field Station engaged in a five-year program of field measurements and data analysis dealing with characteristic properties of the energy spectra and cospectra associated with turbulent energy exchange processes within the first 100 meters of the atmosphere. The early phases of this work were devoted to the development of suitable instrumentation and experimental techniques; these are described in two previous reports (Cramer, Record, Tillman, and Vaughan, 1961; Cramer, Record, and Tillman, 1962). The results of an analysis of some of the experiments, centered primarily on the general form of the spectra and cospectra of the characteristic air properties, are presented in the 1962 report, the results of an analysis of the bulk of the experimental data are presented in the Final Report (Cramer, Record, and Tillman, 1967). The purpose of this series of five volumes is to furnish a comprehensive listing of spectral and cospectral calculations and of associated meteorological measurements obtained during the field program.

The principal objectives of the experimental program were: the direct measurement of the turbulent fluctuations in wind velocity, air temperature, and water vapor density; calculation of the spectral and cospectral distributions of these quantities; and, an investigation of the relation of these distributions to height above ground, surface roughness, and such meteorological parameters as lapse rate, wind speed, and radiation. Attempts to develop new infrared and ultraviolet techniques for measuring humidity fluctuations were unsuccessful. Measurements of humidity fluctuations reported in these volumes are limited to a small number of field experiments in which a microwave refractometer system was used to measure changes in refractive index.

The instrumentation for the field measurement program comprised a fast-response system for the simultaneous measurement of the fluctuations in the orthogonal wind-velocity components, in air temperature, and refractive index at two heights above ground level; and a slow-response system for supporting measurements of radiation, vertical profiles of mean wind speed, wet- and dry-bulb temperature, soil temperature, and other quantities requisite for calculations of the boundary-layer heat budget. Outputs from the fast-response transducers were sampled at intervals of 1.2 sec for periods of one or more hours. Slow-response system outputs are available for similar periods of observation.

The remainder of Section I contains a description of the field site, a summary of the field experiments, a discussion of the basis for selecting data for publication, and a listing of the field experiments included in each volume of the report. A description of the data-acquisition system is presented in Section II. The procedures used in processing the data and in calculating power spectra and cospectra of the measured variable for the range of frequencies from 0.4 to 0.0014 cycles sec⁻¹ are described in Section III. An explanation of the data presentation format precedes the tabulation of the results in each of the five volumes.

A. SITE DESCRIPTION

The field measurement program carried out at the Round Hill Field Station was divided into two phases. The first phase deals with measurements made on a 40-m tower located in a relatively smooth field; in the second phase, similar measurements were made on a 91-m tower located in a wooded area. The field station is situated on a flat point of land bordered by Buzzards Bay on the east and south. The location of the field station and of the meteorological towers used in the two phases of the field program are shown in Figure 1. The 40-m tower T₁ is located about 40 m from the shoreline at the southern edge of a cleared field. The field is about 20 acres in extent and the grass was mowed annually during the experimental program. The grass within a radius of about 100 m to the west and north of tower T₁ was kept trimmed to a length of 5 to 10 cm. At the western edge of the 20-acre field there is a wooded section which is approximately 335 m from T₁ at the nearest point. A ridge with a maximum elevation of 24 m and oriented along a north-south line is located about 1 km west of T₁. For the second phase of the field program, the instrumentation was moved to a 91-m tower T₂ located in the wooded area about 1 km northwest of T₁. The purposes of the relocation were to obtain measurements of turbulence structure above a rougher surface and to extend the measurements to greater heights.

A sketch showing the principal roughness elements in the vicinity of the two towers is presented in Figure 2. The series of overlapping photographs presented in Figures 3 and 7 were taken from the 40-m level of tower T₁ and show the features of the upwind terrain for the first phase of the field program. In these photographs, the camera is pointed successively along azimuth bearings of 216, 254, 294, 329, and 2 deg. The two points of land shown in Figure 3 extend into Buzzards Bay and are approximately 1.5 and 3 km from T₁ (see Figure 1). The extensive area of marshland west of T₁ extends from the shoreline, as shown in Figure 4, across the central region in Figure 5 and terminates in Figure 6. Salt water enters the marsh during normal high tides and completely floods the area during extremely high tides. A network of shallow drainage ditches appears as regular lines in Figure 5. The 91-m tower extends above the horizon just to the right of center in Figure 5. In Figure 7, which shows the view toward the north, a portion of the 20-acre field appears in the foreground, and Buzzards Bay is at the upper right. The location of both meteorological towers is shown in the aerial photograph presented in Figure 8.

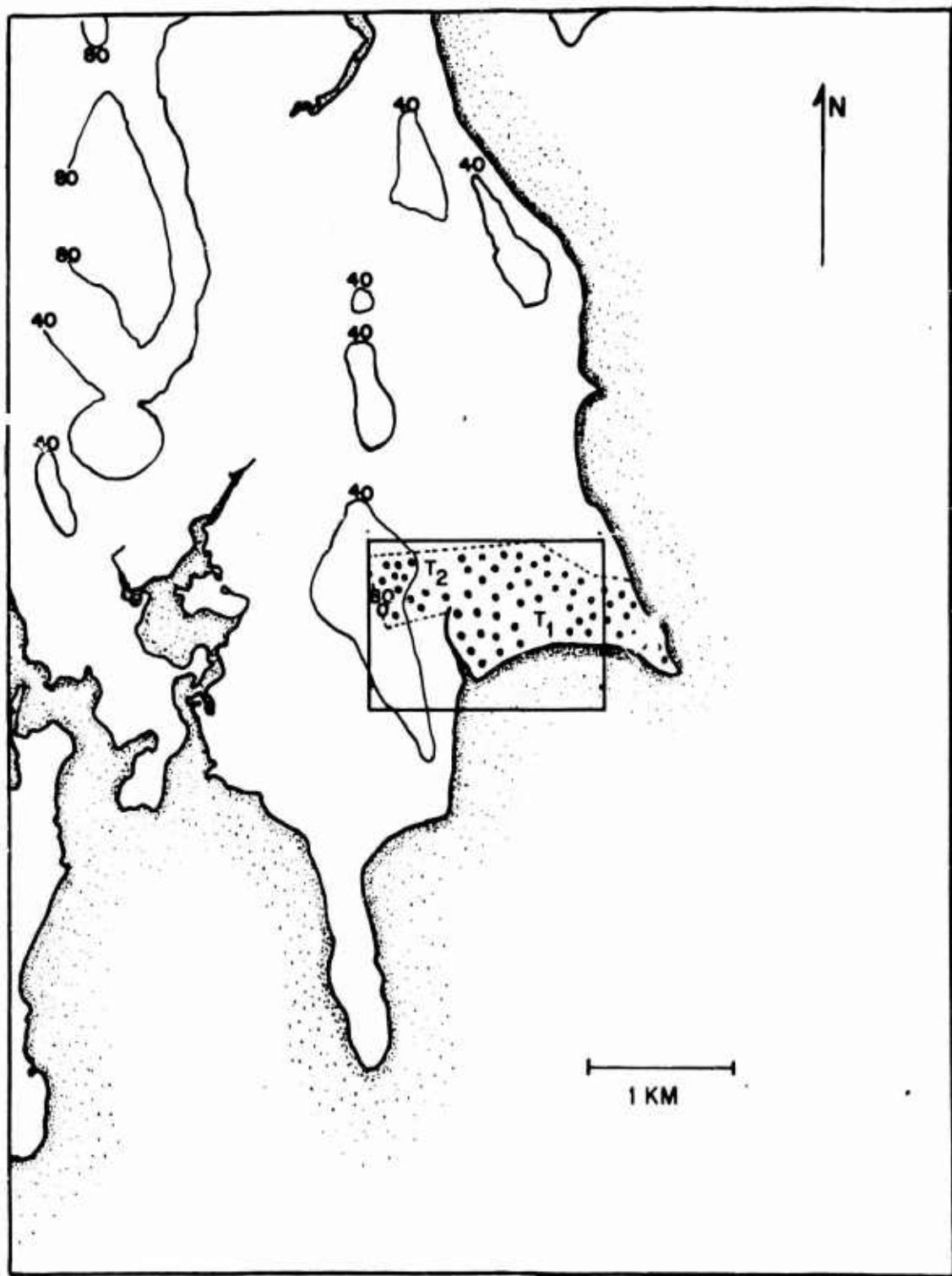
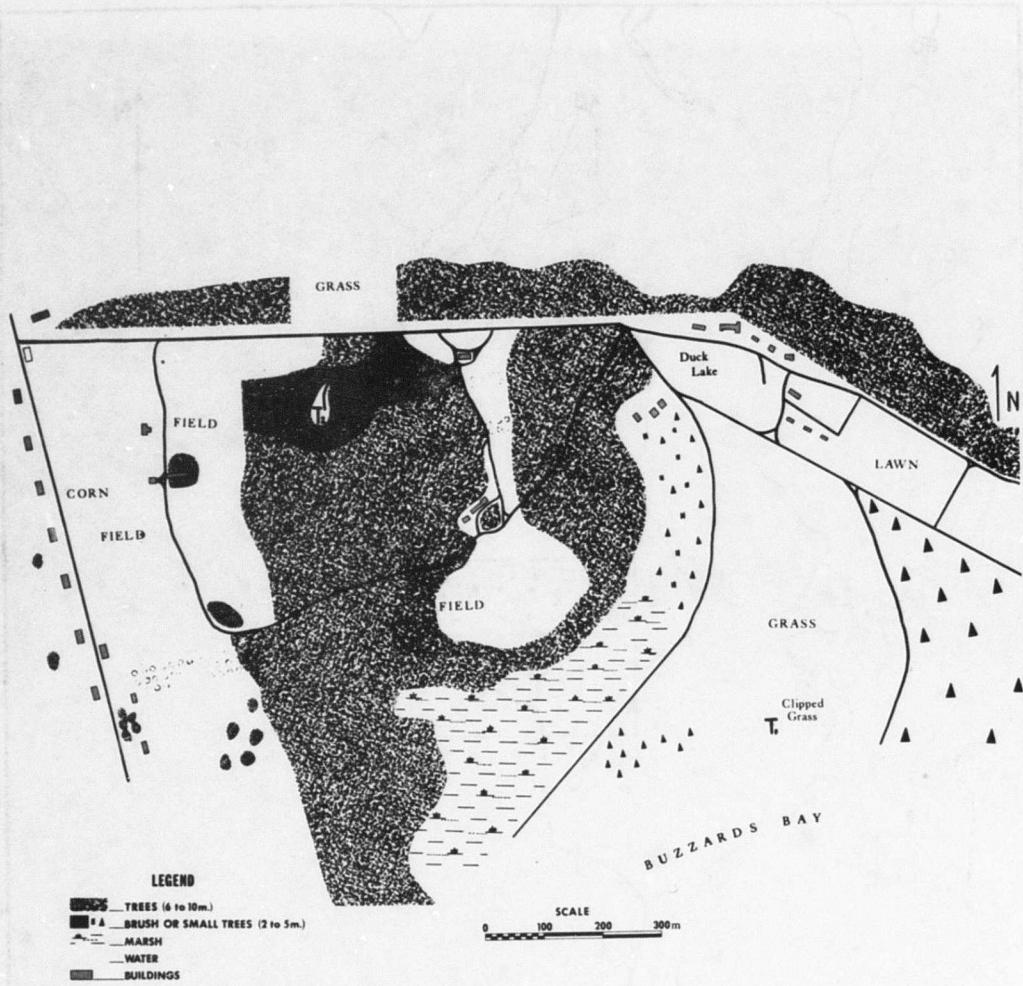


Figure 1. Map showing the location of the Round Hill Field Station. Stippled area marks the estate; the location of the meteorological towers are indicated by the symbols T₁ and T₂. Surface features of the rectangular area are presented in Figure 2.



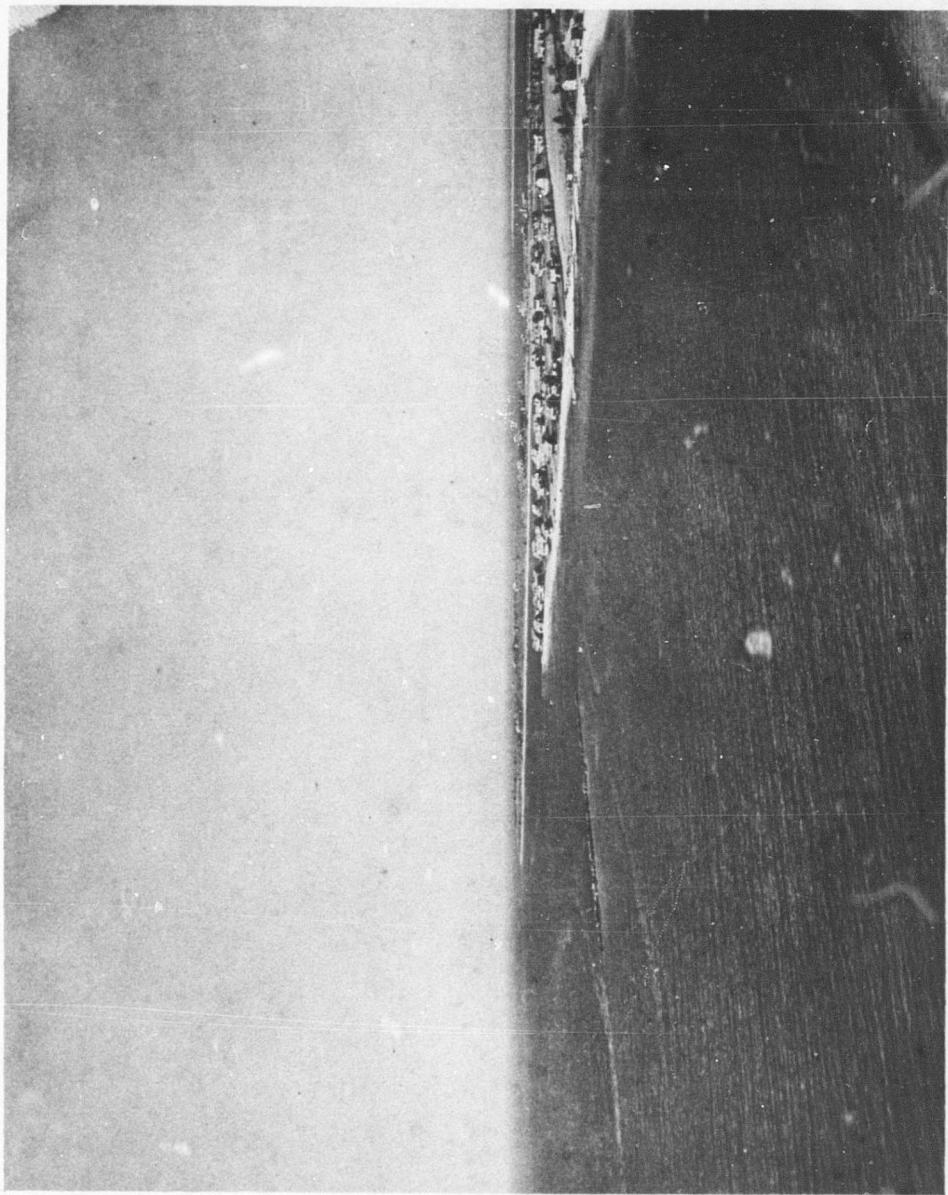


Figure 3. View from 40-m level of T_1 . Camera pointed toward 216 deg.

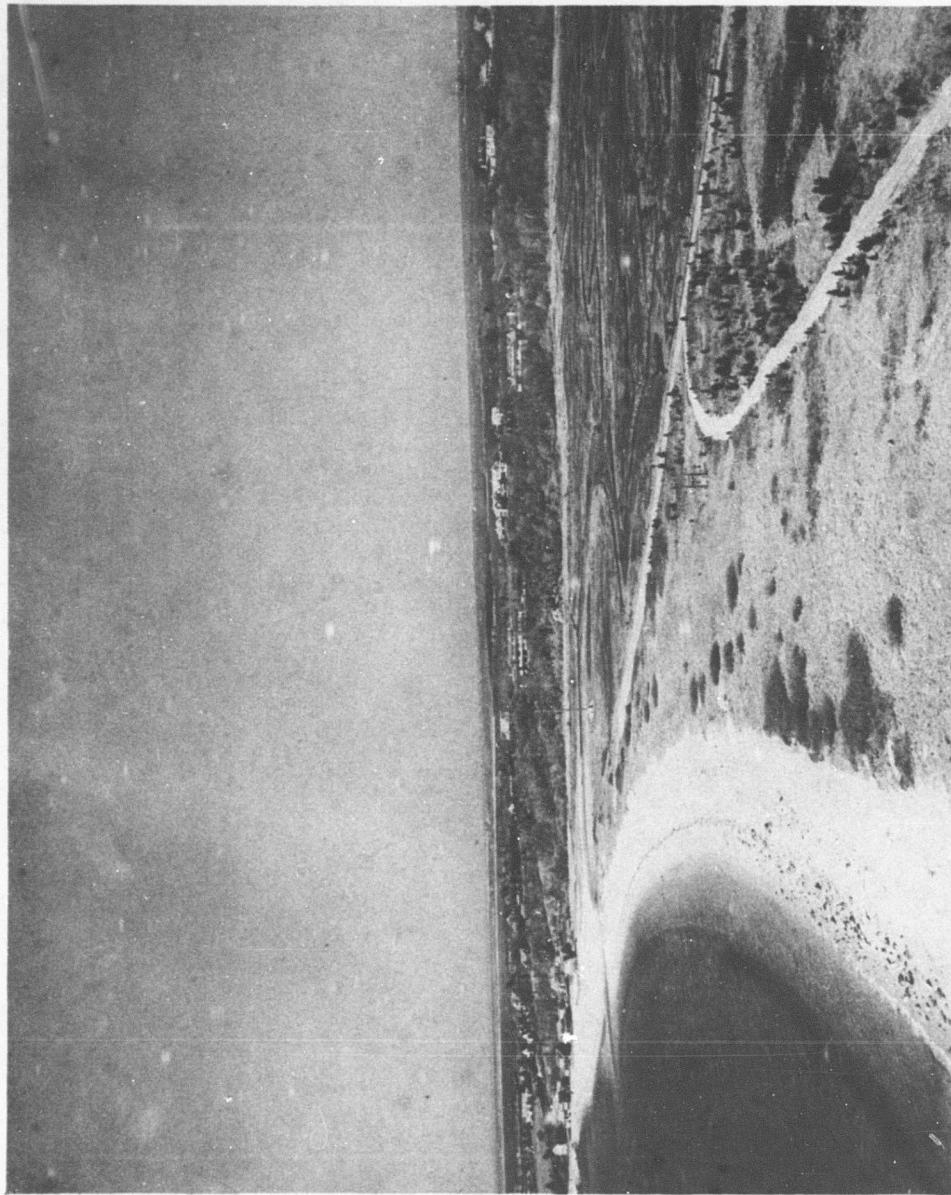


Figure 4. View from 40-m level of T_1 . Camera pointed toward 254 deg.

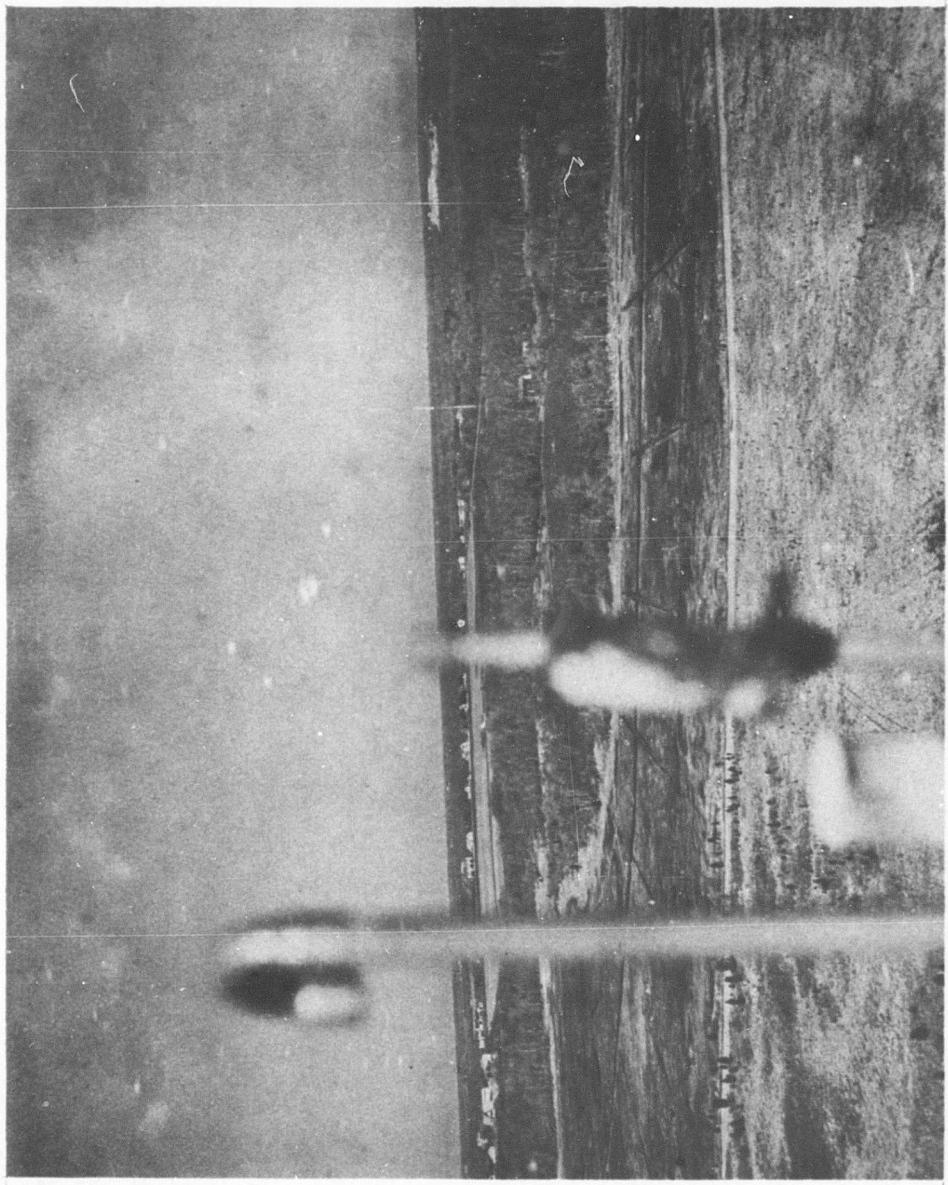


Figure 5. View from 40-m level of T_1 . Camera pointed toward 294 deg.

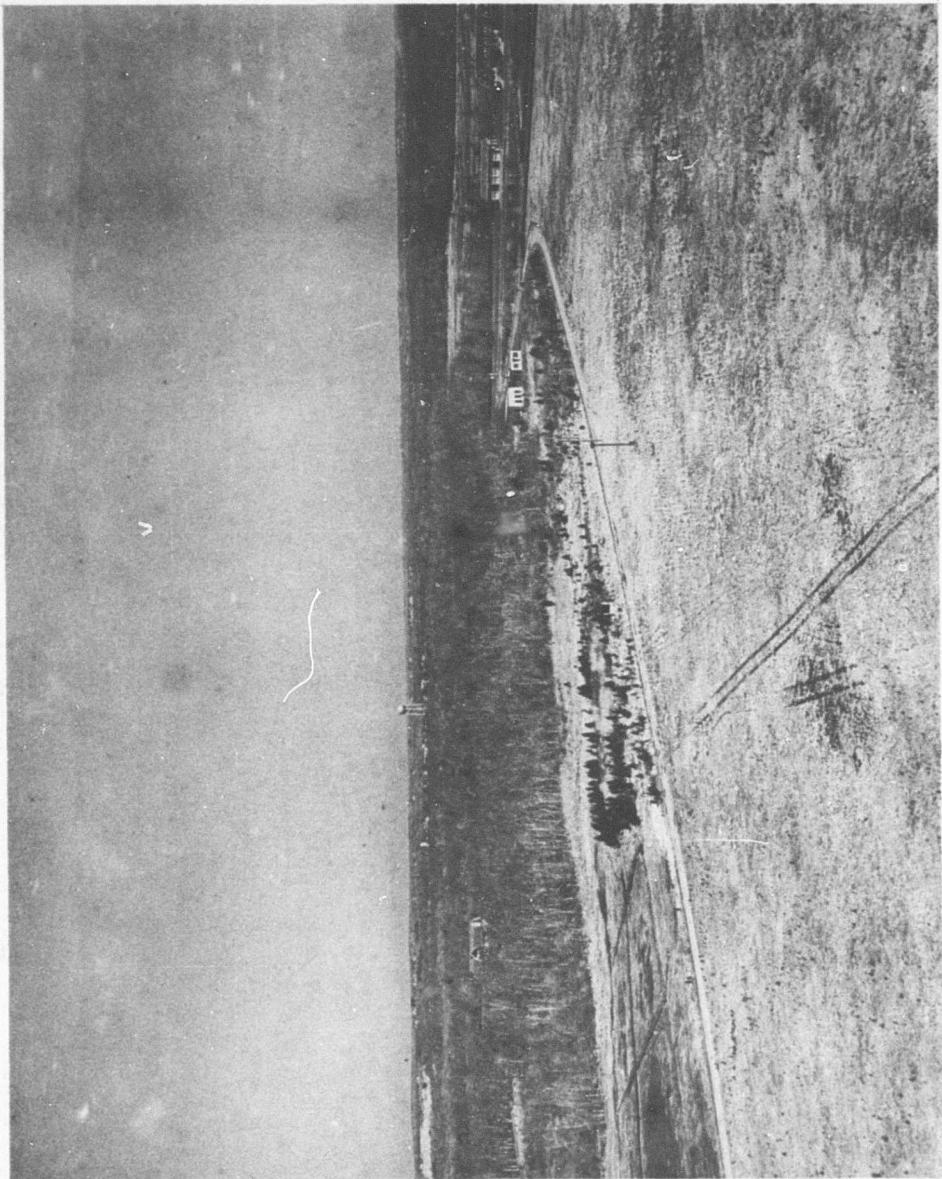


Figure 6. View from 40-m level of T_1 . Camera pointed toward 329 deg.

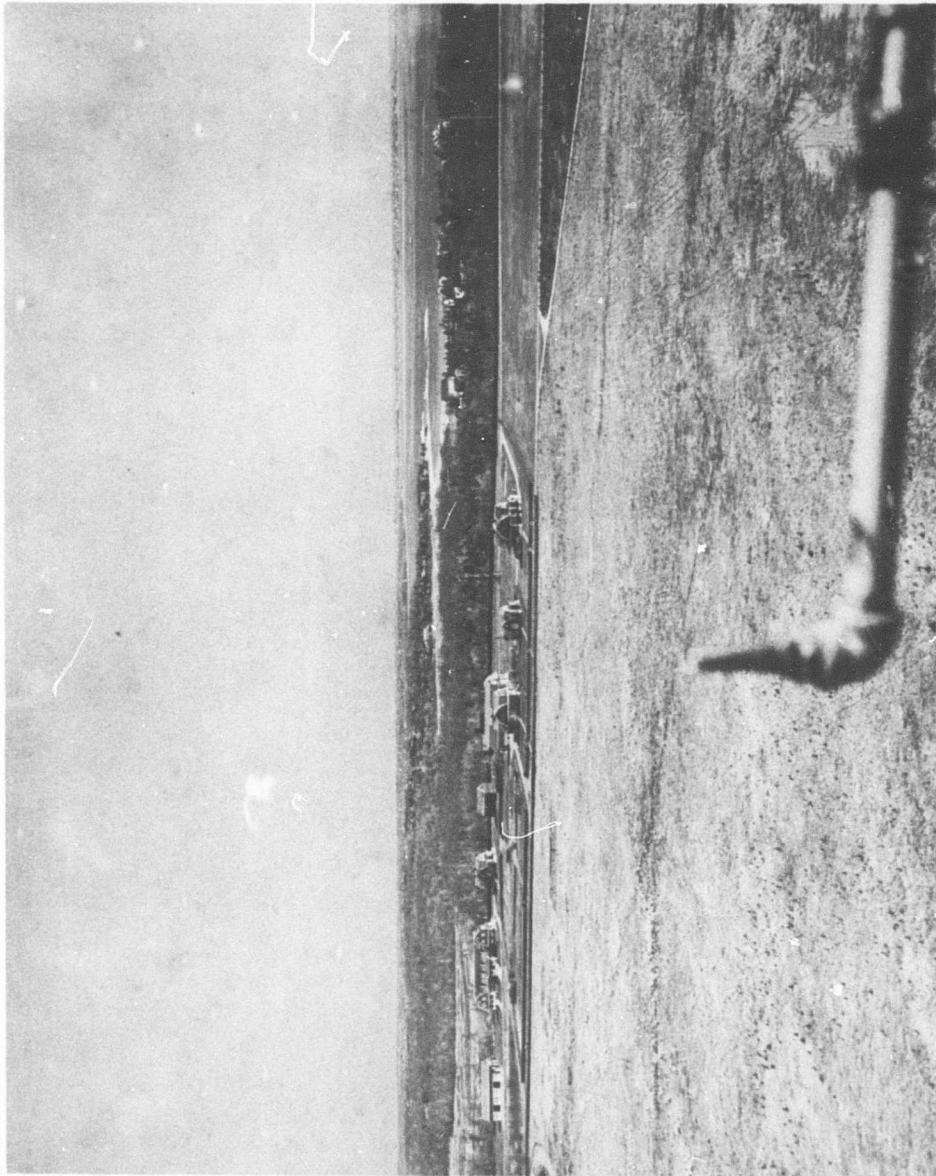


Figure 7. View from 40-m level of T_1 . Camera pointed toward 2 deg.

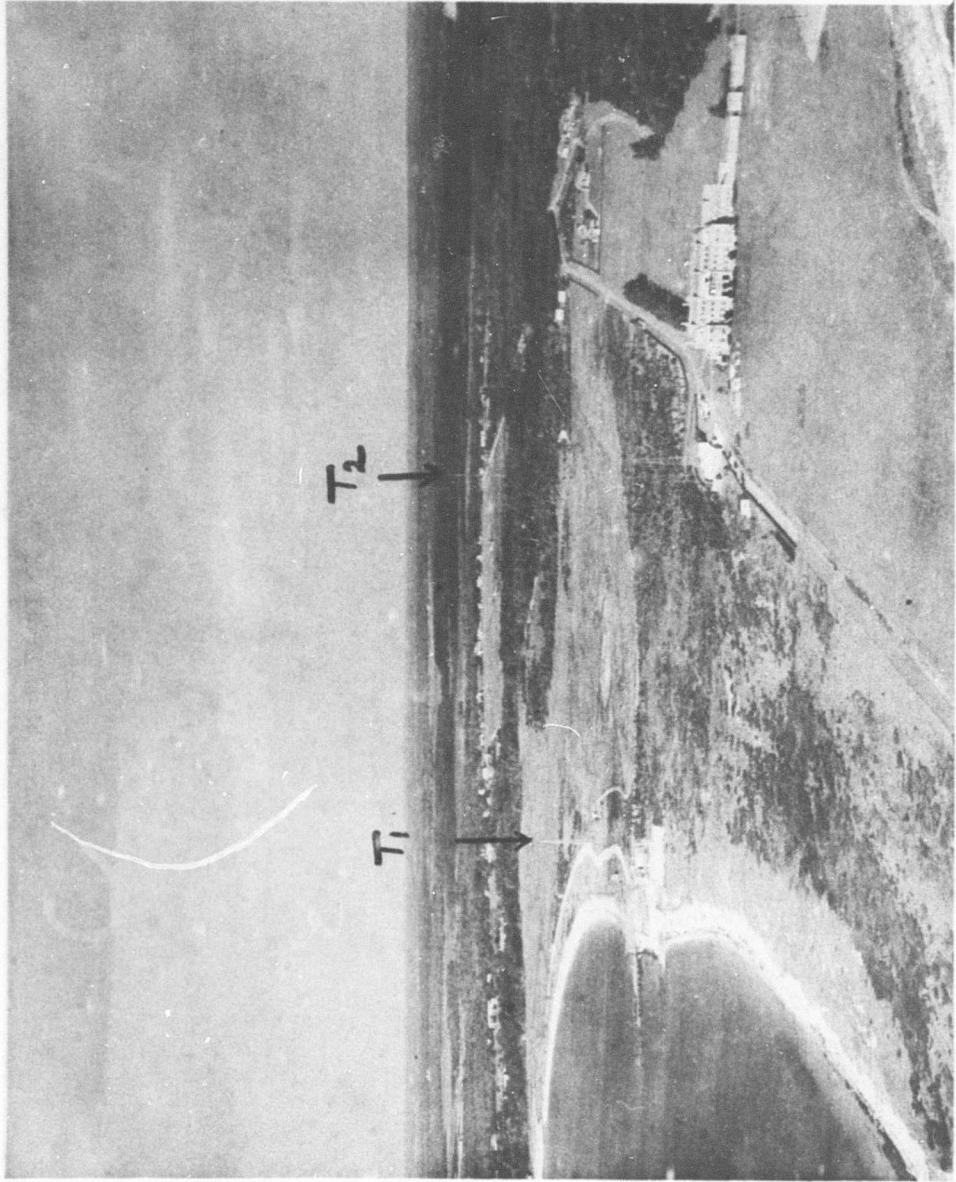


Figure 8. Aerial view of the Round Hill Field Station showing the location of the two meteorological towers. Observer is looking toward the west.

B. SUMMARY OF FIELD EXPERIMENTS

1. Experiments at T_1

During the first phase of the field measurement program, fast-response instrumentation was installed on tower T_1 at heights of 16 m and 40 m above ground level. Seventy-five two-level experiments were successfully carried out during 1961 and 1962, providing a total of 87 hours of data. Fast-response measurements from the 16-m level are also available from 26 additional one-hour experiments. Also, the fast-response data for all experiments included simultaneous observations of the fluctuations in air temperature and the orthogonal components of wind velocity. Refractive index measurements were made at both levels in seven experiments and at the 16-m level alone during six additional experiments. Mean wind directions during the experiments ranged from south through west to north. It is evident from the site description that a wind direction of 245 deg is approximately parallel to the shoreline in the vicinity of T_1 ; more northerly flow has a land trajectory. Air flow in the sector from 205 to 245 deg passes over two points of land upwind from the tower and is thus influenced by both land and water surfaces. Of the total data set of 101 experiments, 22 were carried out in May, 1 in July, 37 in October, 35 in November, and 6 in December; 45 were carried out during unstable thermal stratification, 42 during stable conditions and 14 during transitional or near-neutral conditions; 12 experiments are associated with a water or mixed land-water trajectory, and the remaining 89 with a land trajectory.

The supporting slow-response meteorological observations for these experiments comprised: wind speed measurements made with cup anemometers at heights of 0.25, 0.5, 1, 2, 4, 8, 16, 32, and 40 m; wet- and dry-bulb temperature measurements at each anemometer level and also at 0.12 m; and solar and net radiation. Solar radiation was measured with an Eppley pyrheliometer and net radiation with both Beckman-Whitley and Fritschen* radiometers. In addition, soil temperature measurements needed for the calculation of the heat flux at the earth-air interface were made along a 40-m observation line with three Beckman-Whitley heat plates inserted at a depth of 5 cm beneath the soil surface, and five resistance elements positioned to yield a space-integrated temperature for the soil layer from 0 to -5 cm. The heat capacity of the soil within this layer was calculated from the density and specific heat of dried soil samples determined at the start of the field program, and from measurements during each experiment of the fraction of water present in soil samples from the layer. The temperature profile within the soil at each end of the observation line was also determined for most of the experiments

* Two net-radiometers, designed and fabricated by Dr. Leo Fritschen, were loaned to Round Hill by the U.S. Water Conservation Laboratory Agricultural Research Service, Tempe, Arizona.

by soil thermometers inserted at depths of 1.6, 3.1, 6.2, 12.5, 25, 50, and 100 cm.

2. Experiments at T₂

Provisions were made for the installation of fast-response sensors at three levels (15.2 m, 45.7 m, and 91.4 m) on the 91-m tower to facilitate studies of the height dependence of the turbulence parameters. Since the capacity of the data-acquisition system was limited to simultaneous observations at only two levels, information could be obtained at only two of the three levels during any particular experiment. Thirty two-level experiments comprising 35 hours of data were carried out during June and July 1963. Fast-response data were collected at the 45.7-m level in all of these experiments; during 13 of the experiments, fast-response data were also collected at the 15.2-m level; and during the remaining 17 experiments, at the 91.4-m level. These data consisted of simultaneous observations of the fluctuations in air temperature and wind velocity components at each level. No refractive index measurements were made. Fifteen of the observation periods were during unstable thermal stratification, eight were during stable conditions, and seven during transitional or near-neutral conditions. Data were collected only during periods in which the mean wind direction had a westerly component. For these directions, the surface upwind from the tower is characterized by open fields, bushes, wooded areas, and the N-S ridge which lies about 450-m west of the tower and rises to a height of about 15 m above the base of the tower. The air trajectory for all experiments was over land for distances of at least 1.5 km upwind from the tower. Features of the upwind surface for individual experiments can be determined by reference to Figures 1 and 2 and the mean wind directions listed in the data tabulations.

Slow-response measurements comprised wind speed and air temperature at seven tower levels (3.8, 7.6, 15.2, 30.5, 45.7, 68.6, 91.4 m) and solar radiation.

C. SELECTION OF DATA FOR PUBLICATION

Data from forty-nine experiments carried out at tower T₁ are included in the tabulation presented below. These experiments encompass a wide range of atmospheric stability conditions and also reflect some differences in surface roughness. Final selection was based on the quality of the data after checking and editing procedures had been completed. Due to limitations of time and money, about 25 percent of the 40-m tower data collected during the field program was not processed. Data from 27 of the 30 experiments carried out at T₂ were selected for publication following similar screening procedures.

To include as many experiments with humidity data as possible, Runs 76A, 76B, and 78A have been retained even though systematic errors in encoding the 40-m wind speed occurred during these runs. The principal effect of

these errors is an apparent increase in energy at the high-frequency end of the power spectrum for the u - component of wind velocity. Runs 82D and 82E also contain humidity data.

Runs 43 and 47 were carried out during southwesterly and south-southwesterly flow, respectively; Runs 82C, 82D, and 82E were carried out during a period when the wind direction was gradually veering from northwest to north-northeast. Irregularities found at the higher levels of the wind speed profiles during these runs may have been caused by the supporting tower structure, since the sensors were mounted on fixed booms extending toward the west. Runs 43 and 47 are associated with a water trajectory.

The resistance thermometers used to measure soil-temperature profiles proved to be unreliable, and many failures took place during the experimental program. Absolute calibration of the remaining thermometers is estimated to be within 0.3 C. The data have been included primarily to indicate the marked differences in the behavior of the profiles at the two ends of the 40-m sampling line presumed to be the result of differences in soil composition and vegetative cover. At the north end of the observation line, the ground is covered with thick grass with matted roots penetrating a 15-cm layer of topsoil. Below the topsoil, there is about 20 cm of hard-packed fill followed by 65 cm of moist sand. The ground cover at the south end of the observation line consists of scattered clumps of beach grass. The top 26 cm of soil is beach sand washed in by storms; beneath this layer there are 13 cm of loam, 24 cm of sandy fill, and 37 cm of sand.

D. ORGANIZATION OF VOLUMES

Data summaries for the selected experiments are presented in five volumes. Volumes 1 and 2 refer to the second phase of the measurement program at tower T_2 and contain Runs 87A through 95A and 96A through 104, respectively.

Summaries of the measurements made during the first phase of the field program at tower T_1 are contained in the remaining three volumes. Volume 3 contains Runs 32 through 66 D; Volume 4 contains Runs 66E through 76B; Volume 5 contains Runs 78A through 85C.

Each volume presents tabular summaries of the spectral and cospectral estimates and of the gross statistics for individual experiments. These summaries are preceded by tables of vertical profiles of mean wind speed and air temperature for each experiment. Volumes 3, 4, and 5 also contain tables of soil temperatures and calculated values of the terms in the heat-budget equation for the earth-air interface.

SECTION II

DATA ACQUISITION SYSTEM

A. INTRODUCTION

The meteorological data acquisition system used in the field program consisted of two subsystems: a fast-response installation for the simultaneous measurement of the fluctuations in air temperature, humidity, and the orthogonal components of wind velocity at two tower levels; and a slow-response system for measuring solar radiation, net radiation, vertical profiles of mean wind speed, dry- and wet-bulb air temperature, soil temperature, and other quantities required to calculate the heat budget at the air-earth interface. The complete slow-response installation was used for the first phase of the field program at tower T₁. During the second phase of the program at tower T₂, the slow-response measurements were limited to vertical profiles of mean wind speed and air temperature. Major features of the subsystems are summarized below.

B. SLOW-RESPONSE SUBSYSTEM

1. Wind Speed and Direction Measurements

Wind speeds were measured with cup anemometers. In the first phase of the measurement program, two types of sensors were employed. During the early experiments lightweight cup anemometers were installed at heights of 0.25, 0.5, 1, 2, and 4 m on a small tower located about 12 m northwest of tower T₁. To minimize interference from supporting structures these lightweight anemometers were relocated at the same heights on a pipe mast 10 m to the northwest before the 1962 field program was begun. Conventional 3-cup anemometers were installed at heights of 1, 2, 4, and 8 m on the small tower and at heights of 16, 32, and 40 m on the large tower. Starting and stopping speeds of the larger anemometers are approximately 1 m sec^{-1} and, for the smaller anemometers, are about 0.75 m sec^{-1} . Outputs from both types of sensor are in the form of counts of the number of revolutions of the cup wheels. The small cup anemometers employ a photocell, light source, and single-slot chopper or disc. Each rotation of the cup wheel produces an electrical pulse from the photocell that is amplified, shaped into a square wave form, and fed into a Sodeco counter. The output of the larger cup anemometers consist of electrical pulses produced by a single contact device activated once per revolution of the cup wheel. In the tabulations of mean wind speeds presented in Volumes 3, 4, and 5, values at heights of 0.25 and 0.50 m were obtained from the small cup anemometers; mean wind speeds at all

other heights were obtained from the large cup anemometers. During the second phase of the field measurement program, only the large cup anemometers were used. These were installed at heights of 3.8, 7.6, 15.2, 30.5, 45.7, 68.6, and 91.4 m on tower T₂.

Skeleton slow-response instrumentation was operated continuously to provide background information on fluctuations in wind speed and wind direction. This instrumentation comprised large cup anemometers and flat-plate azimuth vanes. During the first phase of the program these measurements were made at the top of the small tower near T₁; during the second phase of the program, they were made at heights of 16, 46, and 91 m on T₂.

2. Air Temperature Measurements

Air temperatures were measured with C. P. Nickel resistance elements manufactured by RdF Corporation. Each element was sealed in a stainless steel sheath and connected electrically to a 3-wire compensated Wheatstone-bridge. Radiation shielding was provided by housing the sheathed elements in cylindrical sections of phenolic linen tubing; the outer surface of the tubing was covered with gold foil. Each temperature element was ventilated at a uniform rate of about 5 m sec⁻¹. During the first phase of the experimental program at tower T₁, both dry- and wet-bulb temperature measurements were made. For the latter purpose, the sheathed resistance elements were encased in linen wicks connected to water reservoirs. Only dry-bulb temperature measurements were made at tower T₂.

Measurement heights for both the dry- and wet-bulb temperatures were the same as for wind speed at both tower sites (see Section 1 above).

3. Soil Temperature Measurements

Temperature profiles within the soil were measured with electrical resistance elements similar to those described above. Individual temperature probes were positioned at depths of 1.6, 3.1, 6.2, 12.5, 25, 50, and 100 m at both ends of a 40-m observation line. In addition, five elements were inserted vertically in the soil at equally-spaced intervals along the 40-m observation line to provide integrated temperatures for the 0 to 5 cm soil layer. Also, three Beckman-Whitley heat plates connected in series were used to measure the soil heat flux through the -5 cm level.

4. Radiation Measurements

Incoming solar radiation was measured with a 50-junction Eppley pyrheliometer during both phases of the field program. The net flux of long- and short-wave radiation was measured with a Gier and Dunkle type net radiometer, manufactured by Beckman and Whitley, during the first phase of the field program at tower T₁.

5. Data Acquisition

A block diagram of the components of the slow-response system at tower T_1 is shown in Figure 9. The cup anemometer outputs were registered on electro-mechanical counters and on an Esterline-Angus operations recorder. All temperature measurements were registered on a 20-channel Brown strip chart potentiometer. Wind direction, net radiation, solar radiation, and heat plate information were registered on Esterline-Angus recorders.

C. FAST-RESPONSE SUBSYSTEM

The fast-response subsystem provides for the simultaneous measurement of five meteorological variables at each of two fixed locations. Bivanes equipped with bead thermistor anemometers were used to measure wind elevation angle, azimuth angle, and wind speed. These data are later converted through the use of trigonometric relationships to orthogonal components of wind velocity. Air temperature was measured with platinum-wire resistance elements. In some of the experiments, microwave refractometers were used to measure changes in the refractive index of the air which are closely related to changes in atmospheric water vapor density.

The basic components of the fast-response subsystem are shown in Figure 10. The output of each transducer passes through an amplifier-filter system that controls the range of the variable being measured, removes undesirable electrical noise from the signal, and filters the high frequency components of the transducer output such that the response time of all transducers is effectively the same. The filtered output then passes through a servo-balancing recorder where it is registered on a chart by a pen trace. The output also is applied to an electro-mechanical shaft encoder that converts the signal to a binary digital form. The outputs of all shaft encoders are simultaneously sampled every 1.2 sec and stored in a relay memory. The maximum time required for encoder sampling and storage is 0.05 sec. During the remaining 1.15 sec of the sampling cycle, the data are sequentially removed from storage and punched on a paper tape.

The final steps in the preparation of the transducer output data for computer processing were performed off-line, i.e., after an experiment had been completed. These steps include the decoding and transfer of the information on the paper tape to a magnetic tape.

A description of transducer characteristics and the operation of various system components is provided below. Transducer characteristics are summarized in Table 1.

1. Transducers

a. Azimuth and Elevation Angle

The azimuth and elevation angles of the wind were measured by the revised M.I.T. bivane shown in Figure 11. The vane is constructed of

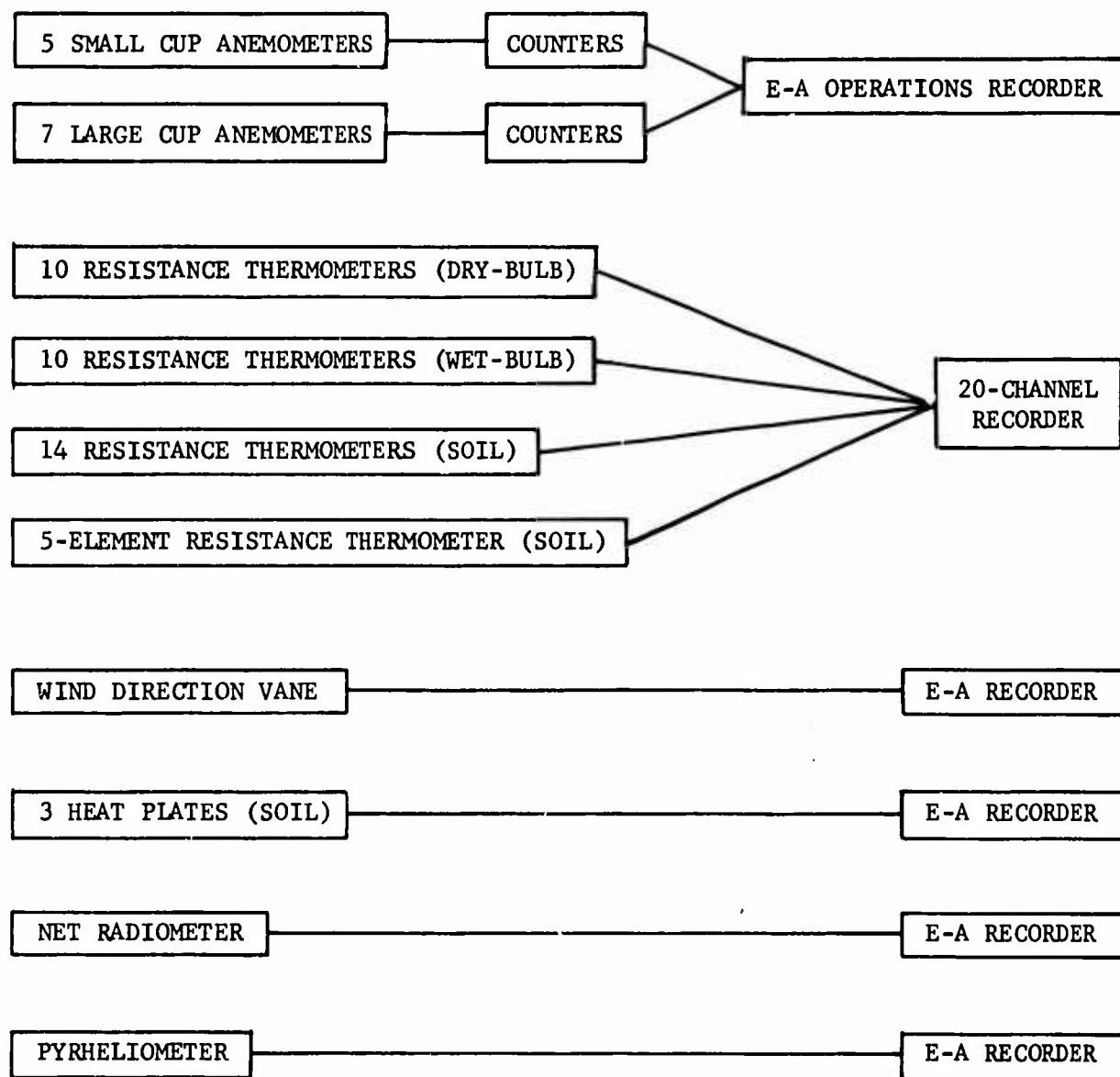


Figure 9. Block diagram of basic components of slow-response system at tower T_1 .

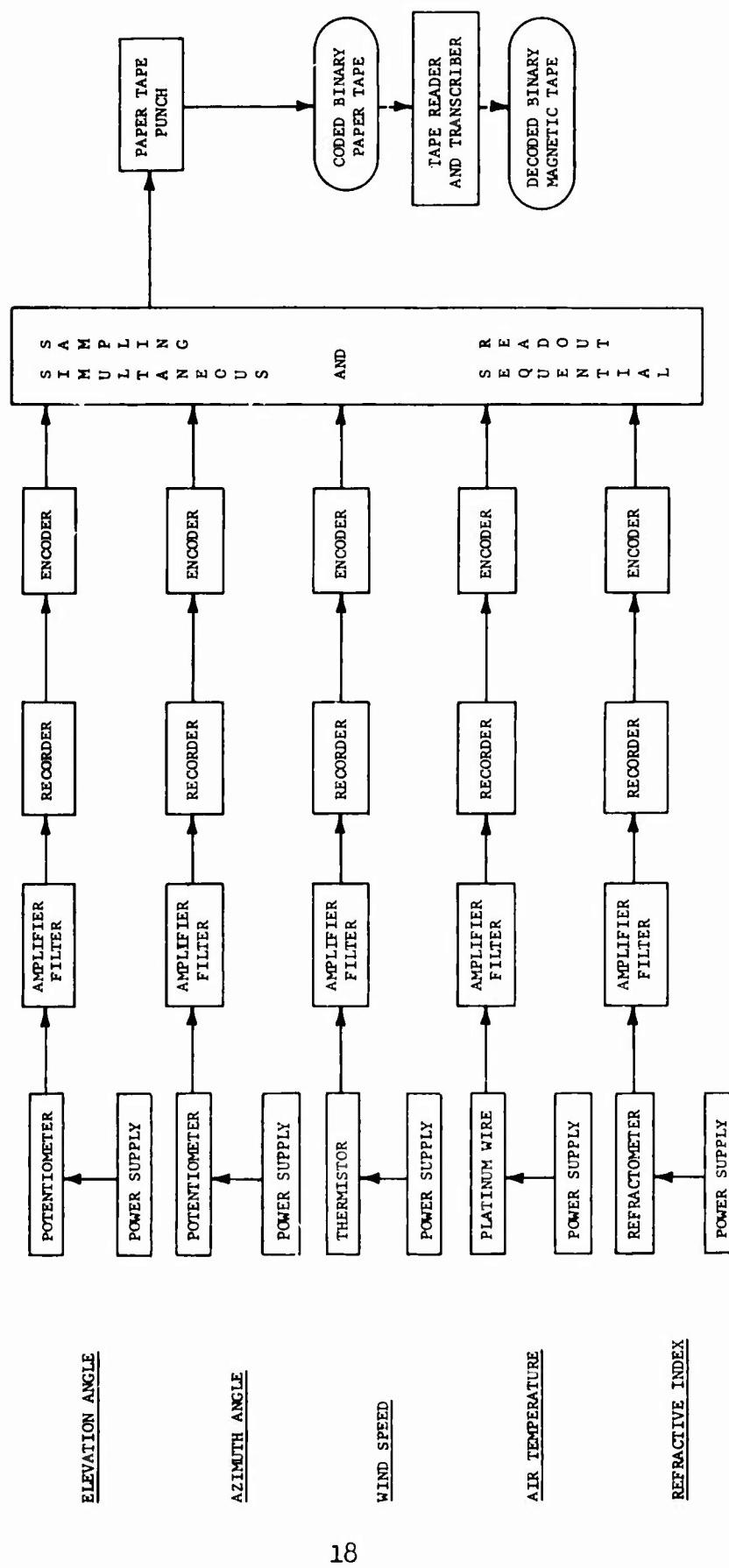


Figure 10. Basic components of fast-response data-acquisition system for measurement at one tower level. Duplicate system for second level. Dashed lines indicate off-line operation.

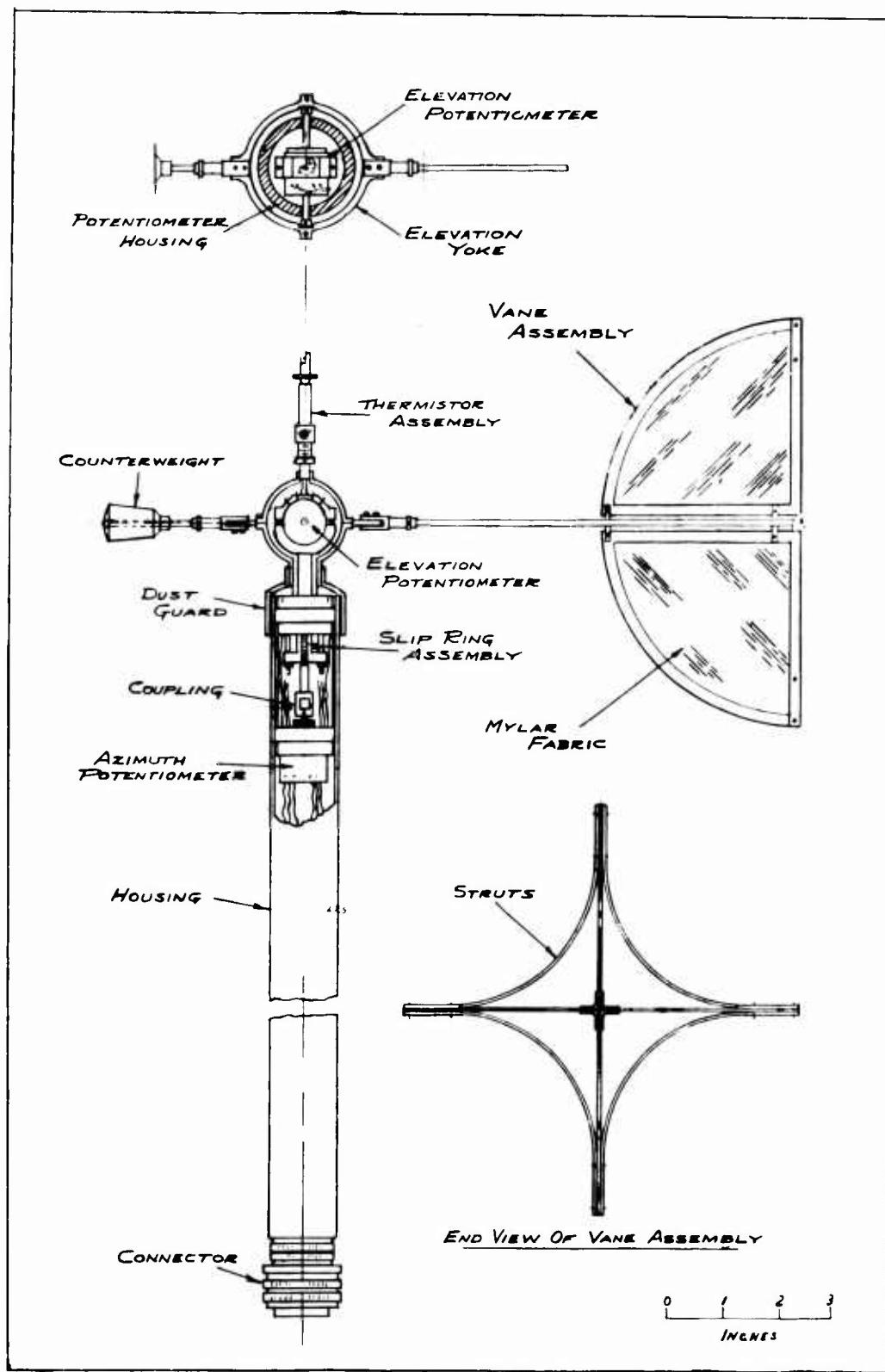


Figure 11. Sketch of the revised MIT bivane.

TABLE 1
SUMMARY OF TRANSDUCER CHARACTERISTICS

Elevation Angle, Bivane

Ranges: ± 25 , ± 50 , ± 75 deg electrical; mechanically limited to ± 55 deg
Distance Constant: 1.5 m
Accuracy: ± 1 percent
Stability: ± 0.1 percent per hour
Resolution: Limited by 8-bit digital encoder
Noise: $\ll \pm 1$ encoder bit

Azimuth Angle, Bivane

Ranges: ± 50 , ± 100 , ± 150 , ± 178 deg electrical; continuous mechanical
Distance Constant: 1.5 m
Accuracy: ± 1 percent
Stability: ± 0.1 percent per hour
Resolution: Limited by 8-bit digital encoder
Noise: $\ll \pm 1$ encoder bit

Wind Speed, Thermistor

Range: 0 to 20 m sec^{-1}
Distance Constant: 1 to 2 m for wind speeds from 2 to 20 m sec^{-1}
Time Constant: < 0.5 sec for wind speed $> 2 \text{ m sec}^{-1}$
Accuracy: ± 15 percent absolute
Stability: ± 1 percent per hour
Resolution: Limited by 8-bit digital encoder
Noise: $\ll \pm 1$ encoder bit

Temperature, Platinum Wire Resistance Element

Range: 5 or 10 C between -20 and +40 C
Distance Constant: < 2 m for wind speed $> 2 \text{ m sec}^{-1}$
Accuracy: ± 0.5 C
Stability: ± 0.01 C per hour neglecting radiation errors
Resolution: Limited by 8-bit digital encoder
Noise: $\ll \pm 1$ encoder bit
Radiation Error: (See text).

Refractive Index, Microwave Refractometer

Range: 5 or 10 N unit segment of the range encountered in the atmosphere
Distance Constant: < 1 m
Accuracy: Relative indications only; absolute value established by reference to wet and dry bulb temperature measurements
Stability: ± 1 N per hour
Resolution: Limited by 8-bit digital encoder
Noise: $\ll \pm 1$ encoder bit

an aluminum frame with a very thin mylar covering. A potentiometer in the spherical top of the vane translates the elevation angle information into voltage while another potentiometer in the top of the vertical tube generates an azimuth signal. The distance constant of the vane is identical for both axes and is approximately 1.5 m.

b. Wind Speed

The wind speed was measured by a heated bead thermistor (Fenwal G-128) mounted on top of the bivane housing. The thermistor assembly is inclined in the vertical so that the response of the transducer is invariant for angles of attack of the wind of ± 25 degrees. This feature of the assembly compensates for an asymmetry in the shape of the bead. The response time of the thermistor for mean wind speeds greater than 2 m sec^{-1} is less than 0.5 sec.

The thermistors were checked and set to zero output at zero wind speed before and after each experiment. Thermistors that showed variations in resistance at zero velocity of more than a few percent were examined under a microscope for contamination or physical damage and either recalibrated or discarded.

c. Temperature

The temperature transducer consists of 0.001-inch platinum wire wound on four vertical supports. The small diameter of the wire ensures a short response time and acceptably small errors due to solar radiation. The response time of the transducer is less than 1 second for wind speeds greater than 2 m sec^{-1} . Tests indicated that under field use the error resulting from heating of the vertical supports might reach 0.2 or 0.3 C for certain sun angles and strong solar radiation. Since the spectral calculations use fluctuation data, these errors in absolute temperature would be of significance only during such periods of alternating clear and cloudy conditions as occasionally occur during days with fair weather cumulus. To minimize errors during these periods, small shades were used to shield the thermometers from direct solar radiation during most of the field program.

d. Humidity

A microwave refractometer was used to obtain fast response humidity measurements for a limited number of experiments at the 40-m tower. The instrument was obtained on loan from the M.I.T. Lincoln Laboratory. At frequencies of 10,000 mc and beyond, the atmospheric refractive index is a strong function of water vapor density due to the large dipole moment of the water vapor molecule. Although the water vapor pressure seldom exceeds 3 to 4 percent of the total atmospheric pressure, it can account for as much as 50 percent of the atmospheric refractive index. The refractive index is also a function of temperature and dry air density. The actual computation of water vapor density is described below.

The microwave refractive index of the air is determined by measuring the resonant frequency of a perforated cavity of fixed dimensions containing an air sample. The resonant frequency of the cavity is given by the expression

$$f = \frac{f_o}{n} = \frac{f_o}{1 + (N \times 10^{-6})}$$

where

f = resonant frequency with ambient gas density
 f_o = resonant frequency with cavity evacuated
 n = refractive index of ambient gas
 N = $(n - 1) \times 10^{-6}$.

Since n rarely exceeds 1.004, the variable N is more often used for atmospheric applications. In terms of pressure, temperature and humidity (National Bureau of Standards Circular #6744):

$$N = \frac{77.6}{T} (P + 4.81 \times 10^3 \frac{e}{T}) ,$$

where

P = total atmospheric pressure in millibars
 e = water vapor pressure in millibars
 T = temperature in degrees Kelvin.

Finally, the relationship between water vapor density and N is given by

$$\rho = \alpha NT - \beta P' ,$$

where

ρ = water vapor density in g/m^{-3}
 $\alpha = 5.8004 \times 10^{-4}$
 $\beta = 4.5011 \times 10^{-2}$.

In practice, the cavity is used as the frequency determining component of a microwave oscillator. The difference in frequency between this oscillator and a reference oscillator in a sealed cavity is used to measure the refractive index. The device used at Round Hill is almost identical in operation to that described by Tuller, Galloway and Zaffarano (1948).

During the experiments, the cavities were ventilated at a rate that ensured a response time considerably less than 1 sec.

D. AMPLIFIER-FILTER SYSTEM

The output signal from each transducer is processed by an amplifier-filter system. The amplifiers control the measurement range of each variable

and the filter networks provide for the control of certain frequencies in the transducer outputs. Specifically, the filter networks perform the following functions. First, they eliminate the power-line frequency and its harmonics which otherwise would appear as dc signals since the recorders are chopper stabilized at the power-line frequency. Second, the filter networks prevent high frequency signals of large amplitude from reaching the recorders. This is essential since the response of the recorders to unfiltered signals of this type is nonlinear due to the finite slewing rates of the recorders. Third, the filter networks reduce the aliasing of spectral estimates inherent in the use of discrete data sample points and make it possible to correct for the aliasing that does occur.

Transmission curves for the amplifier-filter system are shown in Figure 12. The foldover frequency for a sampling rate of one data point every 1.2 sec is $0.416 \text{ cycles sec}^{-1}$. All the energy in the output signal above the foldover frequency appears at lower frequencies in the calculated power spectrum. However, if the amount of high frequency energy is small and if the transmission of the system at these frequencies is known, the power spectrum can be corrected for the aliasing effects. It should be pointed out that the transmission curves in Figure 12 apply to all transducer outputs when the mean wind speed exceeds 2 m sec^{-1} .

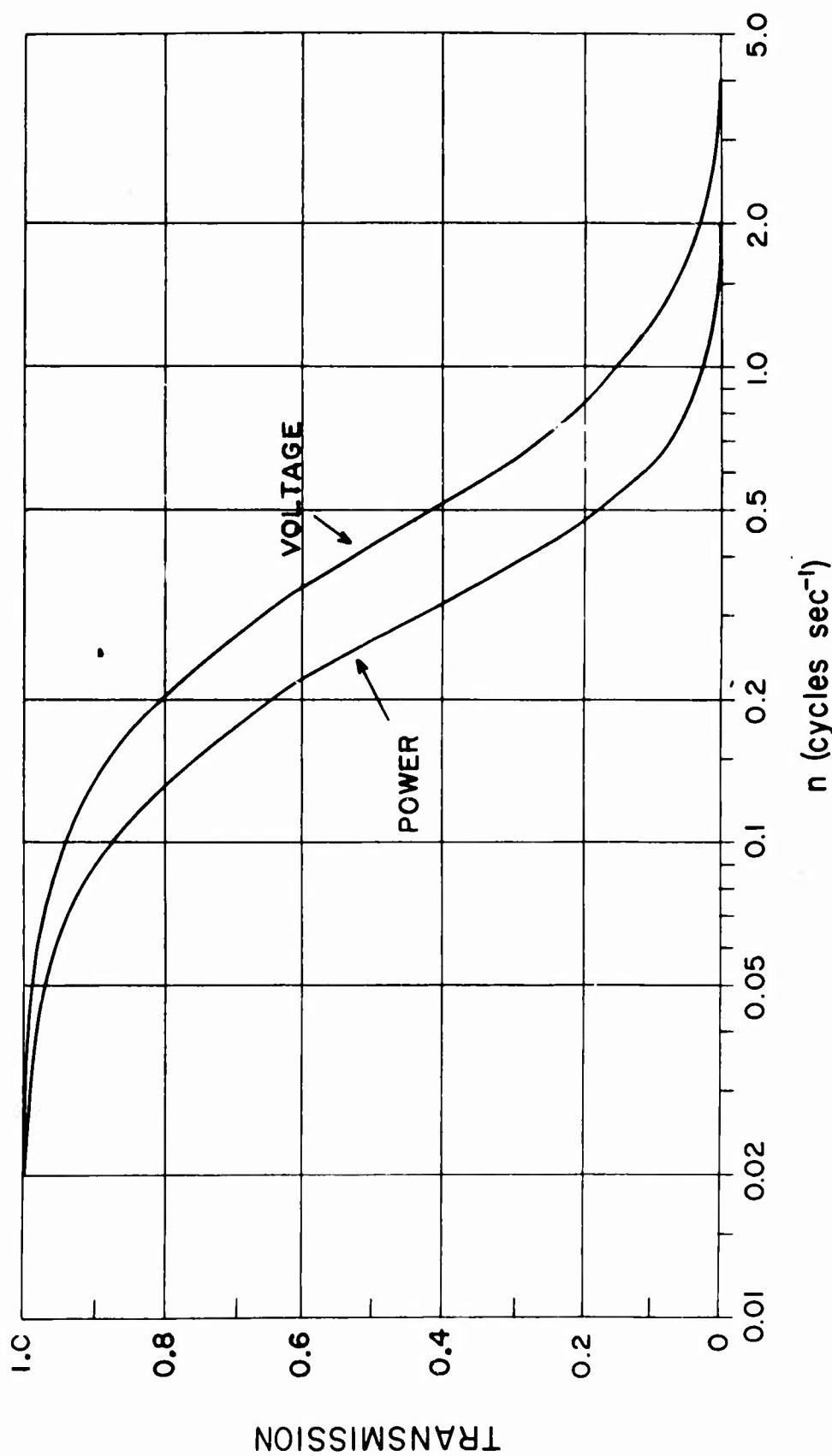


Figure 12. Transmission curves for the amplifier-filter system.

SECTION III

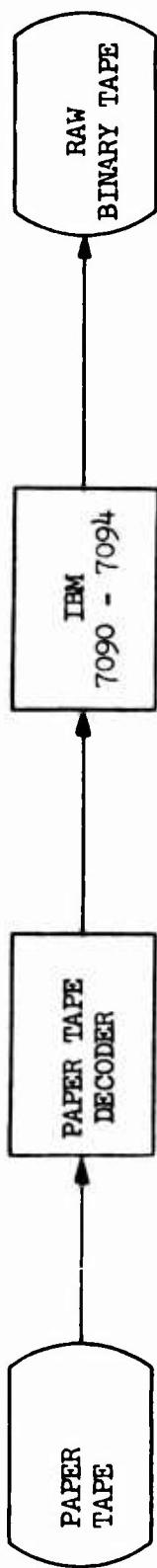
DATA PROCESSING

Processing of the data from the slow-response subsystem was accomplished manually and through the use of desk calculators to obtain the requisite average values of the wind speed, wind direction, dry- and wet-bulb air temperatures, soil temperature, solar and net radiation. The processing of the data from the fast-response subsystem was accomplished by automatic techniques that required a special set of computer programs written in Fortran II language (or Fortran II compatible language) for use with the IBM 7090 or 7094 computer. The sequence of computer operations by which the data were processed is shown schematically in Figure 13. More detailed information on the data-processing procedures may be found in several reports (Cramer, Record, Tillman, and Vaughan, 1961; Cramer, Record, and Tillman, 1962, 1967). A brief description of the computer programs and the mathematical operations used in the data processing is given below.

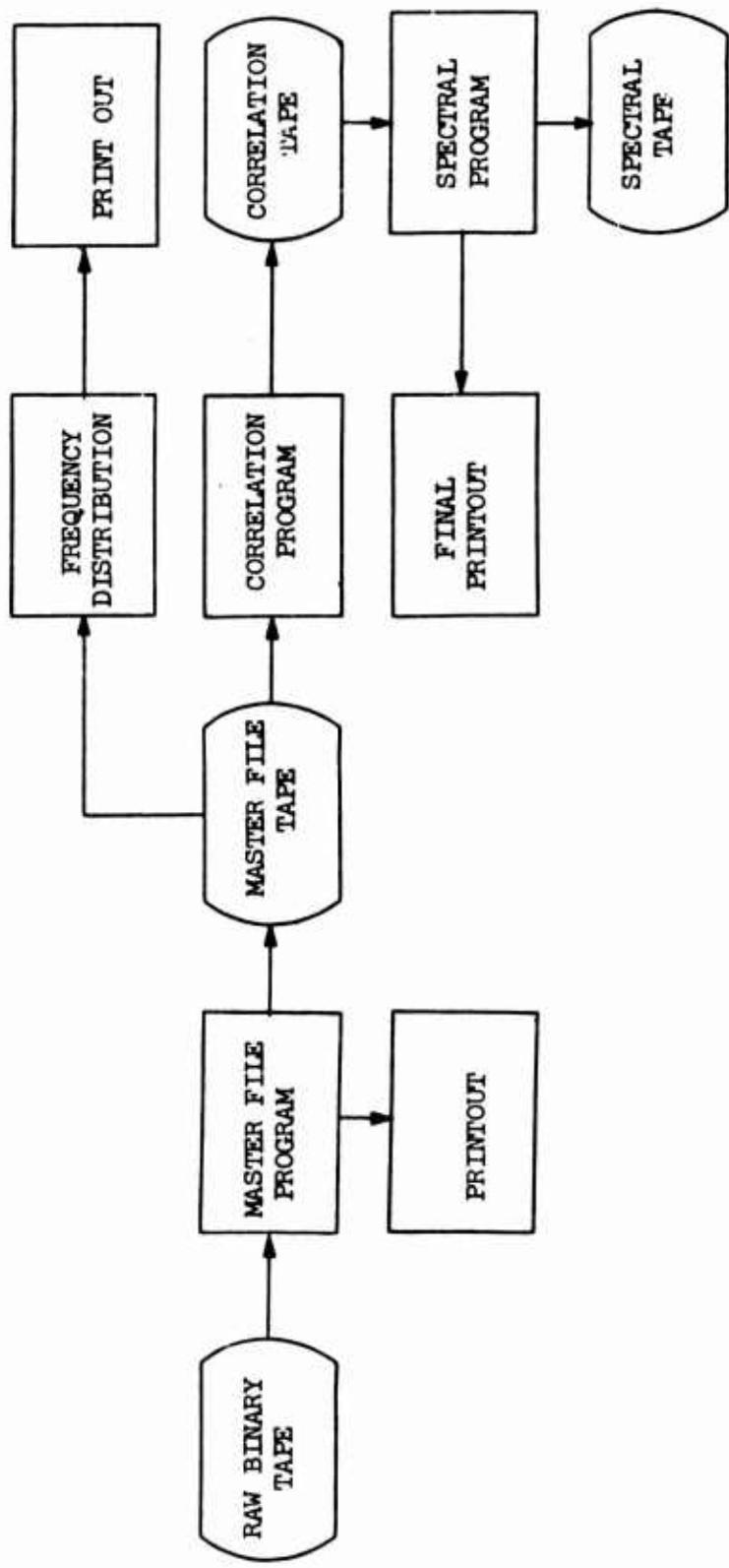
A. CONVERSION OF RAW BINARY DATA FROM PAPER TAPE TO MAGNETIC TAPE AND DATA EDITING

The first steps in processing the fast-response data were the decoding of the data on the punched-paper output tapes, checking for errors in format, and writing the decoded data in binary form on magnetic tape. This phase of the data reduction, which is shown schematically in Figure 13A was accomplished at the M.I.T. Lincoln Laboratory. The computer program for the conversion to magnetic tape provided for an error stop of the decoding process whenever a formatting error was detected in the paper tape. Since formatting errors had to be corrected before the decoding could proceed, errors due to malfunctions of the paper tape reader or punching mechanism were thus readily detected and eliminated. The two remaining sources of error were anomalous data points and faulty initial synchronization of the paper tape. Tape synchronization errors were checked by comparing a sample printout of the decoded data with the corresponding master paper tape records. Erroneous data points were isolated and checked by a special frequency counting program that produced from the raw binary data a table on magnetic tape showing the number of occurrences of the individual variables for each of the 256 segments of the encoding mechanisms. The output of this program was useful in spotting systematic and random errors as well as in checking extreme values in each meteorological variable against the original chart recordings and printouts of the raw data generated by the paper-tape conversion program.

Correction cards were prepared for any erroneous data points discovered by the above processes and the cards were used with the Master File Program described below.



A. Transfer of raw binary data from paper tape to magnetic tape.



B. Sequence of operations from raw binary magnetic tape to the final printout of gross turbulence statistics, correlations, and corrected spectral and spectral estimates.

Figure 13. Block diagram of data-processing operations.

B. SCALING AND CONVERSION OF RAW BINARY DATA TO METEOROLOGICAL UNITS, AND GENERATION OF MASTER DATA FILES

The next steps in processing the fast-response data included the correction of errors previously detected in the raw binary data, conversion of the corrected data to meteorological units, and the writing of new magnetic tapes containing labeled files of the converted data as well as certain input and computed values in a format suitable for spectral and cospectral analysis. These steps were accomplished by the Master File Program which provided for the scaling of the binary sensor data to yield five meteorological variables: Elevation Angle E_i (deg), Azimuth Angle A_i (deg), Wind Speed V_i ($m\ sec^{-1}$), Air Temperature T_i (C), Refractive Index N_i (see Section II C), and Water Vapor Density P_i ($g\ m^{-3}$). The variances of the elevation and azimuth angles were also calculated from the expressions

$$\sigma_E^2 = \frac{1}{N} \sum_{i=1}^N E_i^2 - \left[\frac{1}{N} \sum_{i=1}^N E_i \right]^2 ,$$

and

$$\sigma_A^2 = \frac{1}{N} \sum_{i=1}^N A_i^2 - \left[\frac{1}{N} \sum_{i=1}^N A_i \right]^2 .$$

The quantity N refers to the total number of data points in a single field trial which was about 3000.

The Master File Program also provided for the calculation of the orthogonal velocity components u_i , v_i , and w_i through the use of the following trigonometric relationships:

$$E^* = \tan^{-1} \frac{\sum_{i=1}^N v_i \sin E_i}{\sum_{i=1}^N v_i \cos E_i}$$

$$A^* = \tan^{-1} \frac{\sum_{i=1}^N v_i \cos (E_i - E^*) \sin A_i}{\sum_{i=1}^N v_i \cos (E_i - E^*) \cos A_i}$$

$$U_i = V_i \cos (E_i - E^*) \cos (A_i - A^*)$$

$$\bar{U} = \frac{1}{N} \sum_{i=1}^N U_i$$

$$u_i = U_i - \bar{U}$$

$$v_i = V_i \cos (E_i - E^*) \sin (A_i - A^*)$$

and

$$w_i = V_i \sin (E_i - E^*)$$

The quantities A^* and E^* are virtual mean values of the azimuth and elevation angles required to satisfy the condition that

$$\bar{u}_i \equiv \bar{v}_i \equiv \bar{w}_i \equiv 0$$

The Master File Program additionally provided for calculations of the mean values \bar{T} , \bar{N} , and \bar{P} and of the deviations from the mean t_i , n_i , and p_i through the use of the following expressions:

$$\bar{T} = \frac{1}{N} \sum_{i=1}^N T_i \quad t_i = T_i - \bar{T}$$

$$\bar{N} = \frac{1}{N} \sum_{i=1}^N N_i \quad n_i = N_i - \bar{N}$$

$$\bar{P} = \frac{1}{N} \sum_{i=1}^N P_i \quad p_i = P_i - \bar{P}$$

As shown schematically in Figure 13 B, the output of the Master File Program was a magnetic tape containing labeled data files. The information in each file included: run identification and measurement height; means and variances of elevation angles and azimuth angles; mean wind velocity, air temperature, refractive index, and water vapor density; and, the time-series data sets for u_i , v_i , w_i , t_i , n_i , and p_i . This tape was used as the input to the Frequency Distribution Correlation, and Spectral Analysis Program described below.

C. FREQUENCY DISTRIBUTION, CORRELATION, AND SPECTRAL ANALYSIS PROGRAMS

The processing of the data files from the Master File Tape was accomplished through the use of three computer programs. One of these, the Frequency Distribution Program, was routinely used to calculate frequency distributions of the meteorological variables, second and third moments of the data, and various statistical functions for use in establishing the form of the distributions. This program is similar in many respects to the Frequency Count Program used in checking the raw binary tape data except that the maximum number of class intervals is 17 instead of 256. The Frequency Distribution Program printout was also used to check the quality of the data.

The spectral and cospectral analysis of the Master File data was performed through the use of a pair of programs. The first one, the Correlation Program, provides for statistical filtering of the various data sets, for the calculation of the autocovariance and covariance functions required for calculating the spectral and cospectral estimates, and for the calculation of gross statistics (means, variances, covariances, etc.). The second program (Spectral Program) read the output tape from the Correlation Program, formed the spectral, cospectral, and coherence estimates, and provided both an output tape and printout of the correlations, spectra, cospectra, covariances, and gross statistics in the desired final format. These two programs could have been combined in a single program but there was a significant gain in efficiency for mass production by separating the correlation calculations from the spectral calculations.

The mathematical specifications for the above pair of programs were based on methods of spectral and cospectral analysis for discrete time series described by Blackman and Tukey (1958). Gross statistics for various cross products of these variables as described in Section IV B were calculated for the unfiltered data sets and the filtered sets described below.

Spectral and cospectral analysis was performed in two steps and provided estimates within the time frequency range from 0.417 to 0.0014 cycles sec⁻¹. The first step comprised a 60-lag analysis that yielded spectral and cospectral estimates for the frequency range from 0.417 to 0.0069 cycles sec⁻¹. The original time series for u_i , v_i , w_i , t_i , n_i , and p_i were conditioned for this

analysis by smoothing each series with a 61-point running mean and differencing the original set with respect to appropriate values of this running mean to form a filtered set. This choice of the length of the running mean follows from a consideration of the half-power point of the transmission function for variances (see Pasquill, 1962, p. 14). The purpose of the filtering process is to remove low-frequency variations in the data that are outside the frequency resolution of the 60-lag spectral and cospectral analysis, *i.e.*, frequencies $< 0.0069 \text{ cycles sec}^{-1}$. As indicated in the formulas presented below, the filtered data sets contain $(N-L)$ points — where L is the maximum number of lags — due to the removal of $L/2$ points at each end of the original records in the formation of the running mean.

The second step in the spectral and cospectral analysis comprised a 30-lag analysis that yielded estimates within the time frequency range from 0.0417 to $0.0014 \text{ cycles sec}^{-1}$. Undesirable low-frequency energy was removed from the original records by smoothing the data with a 301-point running mean and differencing, following the procedures described above for filtering the 60-lag analysis data. These filtered data sets, each containing $N - 300$ data points, were then reduced by taking 10-point sequential block averages to form new sets of $(N - 300)/10$ points. The reduced sets were used as inputs to the 30-lag spectral and cospectral programs.

One of the final steps in the spectral and cospectral analysis was the correction of the estimates for the effects of the statistical-filtering and block-averaging processes as well as for the effects of foldover and system-response limitations at high frequencies (see Figure 12). The correction factors are presented in Table 2 for the adjusted frequency bands shown in Table 5.

D. MATHEMATICAL FORMULAS USED IN CONSTRUCTING THE CORRELATION AND SPECTRAL PROGRAMS

The following mathematical expressions were used to specify the computer operations in the Correlation and Spectral Programs.

1. Average of $x_n = \bar{x}$

$$\bar{x} = \frac{1}{N} \sum_{n=1}^N x_n$$

where N is the total number of data points in the set.

TABLE 2

CORRECTION FACTORS APPLIED TO SPECTRAL AND COSPECTRAL ESTIMATES
 TO COMPENSATE FOR RUNNING-MEAN FILTERING, SEQUENTIAL
 BLOCK AVERAGING, SYSTEM RESPONSE, AND FOLDOVER*

60-LAG ANALYSIS

| K | Correction Factor | K | Correction Factor |
|-----|-------------------|-------|-------------------|
| 1 | 1.64 | 9-11 | 1.04 |
| 2 | 1.00 | 12-15 | 1.07 |
| 3 | 1.04 | 16-20 | 1.15 |
| 4 | 1.00 | 21-27 | 1.30 |
| 5 | 1.02 | 28-36 | 1.55 |
| 6 | 1.01 | 37-47 | 1.90 |
| 7-8 | 1.02 | 48-60 | 2.10 |

30-LAG ANALYSIS

| K | Correction Factor | K | Correction Factor |
|---|-------------------|-------|-------------------|
| 1 | 1.64 | 7 | 1.05 |
| 2 | 1.00 | 8 | 1.06 |
| 3 | 1.06 | 9-11 | 1.10 |
| 4 | 1.02 | 12-14 | 1.17 |
| 5 | 1.04 | 15-21 | 1.37 |
| 6 | 1.03 | 22-30 | 1.98 |

*The k values refer to the adjusted frequency bands shown in Table 5.

2. Variance of $x_n = \sigma_x^2$

$$\sigma_x^2 = \frac{1}{N} \sum_{n=1}^N (x_n - \bar{x})^2$$

3. Covariance of $x_n, y_n = \sigma_{x,y}^2$

$$\sigma_{x,y}^2 = \frac{1}{N} \sum_{n=1}^N (x_n - \bar{x})(y_n - \bar{y})$$

4. High-Pass Statistical Filter (Running Mean and Differencing Procedure)

The filtered data set is defined by the expression

$$\hat{x}_n = x_n - \frac{1}{L+1} \sum_{j=-L/2}^{L/2} x_{n+j}, \quad n = (L/2 + 1), (L/2 + 2), \dots, (N - L/2)$$

where \hat{x}_n is the filtered n^{th} value, x_n is the n^{th} value of the original set, L is the maximum number of lagged products used in the spectral analysis, and N is the total number of data points in the original set.

5. Sequential Block Averaging

The reduced set of sequential block-averaged data points is given by

$$\tilde{x}_n = \frac{1}{m} \sum_{j=m(n-1)+1}^{mn} x_j, \quad n = 1, 2, \dots, M; M \text{ the least integer } > \frac{N}{m} - 1$$

where \tilde{x}_n is the reduced n^{th} value and m is the number of data points within each block to be included in the average.

6. Autocovariance of $x_n = R_\ell$

$$R_\ell = \frac{1}{N-\ell} \sum_{n=\ell+1}^N x_{n-\ell} x_n - \frac{1}{(N-\ell)^2} \sum_{n=\ell+1}^N x_{n-\ell} \sum_{n=\ell+1}^N x_n, \quad \ell = 0, 1, \dots, L$$

where L is the maximum number of lagged products.

7. Covariance of $x_n, y_n = C_\ell$

$$C_\ell = \frac{1}{N-\ell} \sum_{n=\ell+1}^N x_{n-\ell} y_n - \frac{1}{(N-\ell)^2} \sum_{n=\ell+1}^N x_{n-\ell} \sum_{n=\ell+1}^N y_n, \quad \ell = 0, 1, \dots, L$$

and

$$C_{-\ell} = \frac{1}{N-\ell} \sum_{n=\ell+1}^N y_{n-\ell} x_n - \frac{1}{(N-\ell)^2} \sum_{n=\ell+1}^N y_{n-\ell} \sum_{n=\ell+1}^N x_n, \quad \ell = 0, 1, \dots, L$$

where L is the maximum number of lagged products.

8. Power Spectrum Estimates = G_k

$$G_0 = \frac{1}{2L} \left\{ R_0 + \sum_{\ell=1}^L R_\ell \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = 0$$

$$G_k = \frac{1}{L} \left\{ R_0 + \sum_{\ell=1}^L R_\ell \cos \left(\frac{k\ell\pi}{L} \right) \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = 1, 2, \dots, L-1$$

$$G_L = \frac{1}{2L} \left\{ R_0 + \sum_{\ell=1}^L R_\ell \cos (\ell\pi) \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = L$$

9. Cospectral Estimates = Z_k

$$Z_0 = \frac{1}{2L} \left\{ C_0 + \sum_{\ell=1}^L \left[\frac{C_\ell + C_{-\ell}}{2} \right] \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = 0$$

$$z_k = \frac{1}{L} \left\{ c_o + \sum_{\ell=1}^L \left[\frac{c_\ell + c_{-l}}{2} \right] \cos \left(\frac{k\ell\pi}{L} \right) \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = 1, 2, \dots, L-1$$

$$z_L = \frac{1}{2L} \left\{ c_o + \sum_{\ell=1}^L \left[\frac{c_\ell + c_{-l}}{2} \right] \cos (\ell\pi) \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = L$$

10. Quadrature Spectrum Estimates = Q_k

$$Q_o = \frac{1}{2L} \left\{ \sum_{\ell=1}^L \left[\frac{c_\ell - c_{-l}}{2} \right] \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = 0$$

$$Q_k = \frac{1}{L} \left\{ \sum_{\ell=1}^L \left[\frac{c_\ell - c_{-l}}{2} \right] \cos \left(\frac{k\ell\pi}{L} \right) \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = 1, 2, \dots, L-1$$

$$Q_L = \frac{1}{2L} \left\{ \sum_{\ell=1}^L \left[\frac{c_\ell - c_{-l}}{2} \right] \cos (\ell\pi) \left[1 + \cos \left(\frac{\ell\pi}{L} \right) \right] \right\}, \quad k = L$$

11. Coherence Estimates = COH_k

$$\text{COH}_k = \frac{z_k^2 + Q_k^2}{G_k(x) G_k(y)}, \quad k = 0, 1, \dots, L$$

12. Total Turbulent Kinetic Energy = E

$$E = \frac{1}{2N} \sum_{i=1}^N (u_i^2 + v_i^2 + w_i^2)$$

13. Vertical Flux of Total Turbulent Kinetic Energy = WE

$$WE = \frac{1}{2N} \sum_{i=1}^N w_i (u_i^2 + v_i^2 + w_i^2)$$

SECTION IV

DATA TABULATION FOR RUNS 87A THROUGH 95A

A. VERTICAL PROFILES OF MEAN WIND SPEED AND AIR TEMPERATURE

Vertical profiles of mean wind speed and air temperature, based on measurements taken at seven heights within the layer from 3.8 m to 91.4 m, are presented in Tables 3 and 4, respectively. Run number, date, and time duration of the measurements are indicated by column headings in the body of each table.

B. TURBULENCE STATISTICS

Turbulence statistics are tabulated separately for each run and for each level at which data are available. Throughout the tabulation U, V, and W refer to the orthogonal components of the wind velocity and T refers to temperature. The letter E refers to the total kinetic energy defined by the expression $E = 1/2(U^2 + V^2 + W^2)$. Units of velocity are m sec^{-1} and the unit of temperature is deg C. Covariances and cospectra are identified by the appropriate symbols of the two variables separated by a comma, except that the covariance between the vertical component of the wind velocity and the total kinetic energy is identified simply by WE. The data presentation follows a standard format which is explained below.

1. Identification of Experiment

The run number, measurement height, date, and the time duration of each experiment are listed at the top of the first page of each data set

2. Gross Statistics

a. Summary Information

Summary information is presented in three vertical columns. The first column gives the amount of cloud cover in tenths followed by the cloud type, and the thermal stratification. The second vertical column lists the mean wind speed, the mean azimuth wind direction, and the solar radiation. The third column presents the standard deviations of azimuth angle and elevation angle.

TABLE 3
VERTICAL PROFILES OF MEAN WIND SPEED

| Run No. | 87A | 88A | 89A | 90A |
|-------------------|-----------|-----------|-----------|--|
| Date | 6-14-63 | 6-18-63 | 6-18-63 | 6-18-63 |
| Time (EST) | 1401-1502 | 0936-1052 | 1336-1437 | 1501-1601 |
| <u>Height (m)</u> | | | | <u>\bar{U} (m sec⁻¹)</u> |
| 91.4 | 5.31 | 4.65 | 7.55 | 6.99 |
| 68.6 | 5.18 | 5.04 | 7.20 | 6.47 |
| 45.7 | 4.83 | 5.15 | 6.75 | 5.77 |
| 30.5 | 4.72 | 5.13 | 6.45 | 5.44 |
| 15.2 | 3.88 | 4.12 | 5.06 | 4.16 |
| 7.6 | 3.24 | 3.45 | 4.20 | 3.46 |
| 3.8 | 2.75 | 2.89 | 3.54 | 2.93 |
| <u>Height (m)</u> | | | | <u>\bar{U} (m sec⁻¹)</u> |
| 91.4 | 8.60 | 9.42 | 8.75 | 8.76 |
| 68.6 | 7.78 | 8.18 | 7.66 | 7.48 |
| 45.7 | 6.75 | 6.72 | 6.14 | 5.83 |
| 30.5 | 6.36 | 6.03 | 5.43 | 4.90 |
| 15.2 | 5.24 | 4.84 | 4.13 | 3.58 |
| 7.6 | 4.36 | 3.94 | 3.35 | 2.72 |
| 3.8 | 3.57 | 3.21 | 2.67 | 2.12 |
| <u>Height (m)</u> | | | | <u>\bar{U} (m sec⁻¹)</u> |
| 91.4 | 9.09 | 8.75 | 6.17 | 6.18 |
| 68.6 | 7.83 | 7.69 | 5.50 | 5.65 |
| 45.7 | 6.00 | 5.97 | 4.97 | 5.21 |
| 30.5 | 5.00 | 5.09 | 4.64 | 4.98 |
| 15.2 | 3.56 | 3.78 | 3.81 | 4.15 |
| 7.6 | 2.65 | 2.94 | 3.23 | 3.51 |
| 3.8 | 2.04 | 2.22 | 2.68 | 2.84 |

TABLE 4
VERTICAL PROFILES OF MEAN AIR TEMPERATURE

| Run No. | 87A | 88A | 89A | 90A |
|-------------------|-----------|-----------|-----------|-----------|
| Date | 6-14-63 | 6-18-63 | 6-18-63 | 6-18-63 |
| Time (EST) | 1401-1502 | 0936-1052 | 1336-1437 | 1501-1601 |
| <u>Height (m)</u> | | | | |
| 91.4 | 19.4 | 21.4 | 18.6 | 19.0 |
| 68.6 | 19.7 | 21.2 | 18.9 | 19.3 |
| 45.7 | 20.0 | 21.2 | 19.1 | 19.5 |
| 30.5 | 20.3 | 21.5 | 19.5 | 19.9 |
| 15.2 | 20.7 | 21.9 | 19.9 | 20.1 |
| 7.6 | 21.0 | 22.2 | 20.2 | 20.4 |
| 3.8 | 21.2 | 22.5 | 20.5 | 20.6 |
| <u>Height (m)</u> | | | | |
| Run No. | 90B | 90C | 90D | 91A |
| Date | 6-18-63 | 6-18-63 | 6-18-63 | 6-18-63 |
| Time (EST) | 1615-1714 | 1721-1836 | 1840-1956 | 2150-2300 |
| 91.4 | 20.0 | 20.0 | 18.0 | 18.4 |
| 68.6 | 20.2 | 20.0 | 18.0 | 17.4 |
| 45.7 | 20.5 | 20.1 | 18.1 | 17.0 |
| 30.5 | 20.8 | 20.2 | 18.1 | 16.7 |
| 15.2 | 20.9 | 20.2 | 18.1 | 16.6 |
| 7.6 | 21.0 | 20.2 | 18.0 | 16.4 |
| 3.8 | 21.1 | 20.2 | 17.9 | 16.2 |
| Run No. | 91B | 92A | 94A | 95A |
| Date | 6-18-63 | 6-19-63 | 6-19-63 | 6-19-63 |
| Time (EST) | 2306-0010 | 0030-0145 | 1306-1422 | 1446-1602 |
| <u>Height (m)</u> | | | | |
| 91.4 | 18.4 | 18.4 | 18.9 | 17.6 |
| 68.6 | 17.5 | 17.2 | 19.3 | 17.9 |
| 45.7 | 16.6 | 16.4 | 19.6 | 18.2 |
| 30.5 | 16.4 | 16.2 | 20.0 | 18.5 |
| 15.2 | 16.1 | 16.1 | 20.4 | 18.8 |
| 7.6 | 15.9 | 15.9 | 20.7 | 19.1 |
| 3.8 | 15.8 | 15.8 | 21.0 | 19.3 |

b. Variances

Variances are presented for the three components of the wind velocity and for air temperature. Identification of the variables for which the variances and other gross statistics have been calculated appears in the column at the left. Variances identified by E are one-half the sum of the variances of the three velocity components.

The variances for U, V, W, and T are presented for the four conditions indicated by the column headings below the summary information. These are:

- . . With No Running Mean - refers to the complete data set.
- . . With 301 Point Running Mean - data have been differenced with respect to a 301-point running mean.
- . . With 61 Point Running Mean - data have been differenced with respect to a 61-point running mean.
- . . 301 Pt Run Mean 10 Pt Block Avg - the 301-point running mean data set described above has been reduced by 10-point sequential block averaging.

The variance for E is presented for the first three of these data sets only.

c. Gustiness Ratios

The gustiness ratios for the three orthogonal components of the wind velocity are defined as σ_u/U , σ_v/U , σ_w/U where σ is the standard deviation of the distribution and U is the mean wind speed. Gustiness ratios are presented for each of the four data sets described above.

d. Covariances

The covariances U,V; U,W; U,T; V,W; V,T; and W,T are presented for each of the four data sets. The covariance WE is presented for the first three data sets only.

e. Normalized Covariances

The normalized covariances for U,V; U,W; U,T; V,W; V,T; and W,T were calculated by dividing the covariances by the product of the standard deviations of the two variates.

3. Spectral and Cospectral Estimates

Spectral and cospectral calculations were carried out using the last two data sets described in Section 2b above for variables U, V, W, and T.

The results are presented in the following order:

a. 61 Point Running Mean, No Block Averaging

Normalized cospectrum covariance
Normalized quadrature covariance
Normalized autocovariance
Cospectrum
Quadrature spectrum
Power spectrum

b. 301 Point Running Mean, 10 Point Block Average

Normalized cospectrum covariance
Cospectrum
Normalized quadrature covariance
Quadrature spectrum
Normalized autocovariance
Power spectrum

c. Coherence

Estimates of the coherence between levels are presented for each of the three wind velocity components and for temperature. These estimates include quadrature and are presented for both the 61 Point Running Mean, No Block Averaging and the 301 Point Running Mean, 10 Point Block Average data sets. Tabulation of the coherence estimates follows the power spectrum estimates for the second level.

Cospectrum covariance, quadrature covariance, and autocovariance are tabulated against lag number M. Cospectrum covariance and quadrature covariance estimates have been normalized by dividing by the product of the standard deviations of the two variables; autocovariance estimates have been normalized by dividing by the variance of the data set. Normalization factors are listed at the head of each column.

Cospectrum, quadrature spectrum, power spectrum, and coherence estimates are tabulated against K number. Tabulated values should be multiplied by the power of 10 indicated in the column heading. Estimates have been combined within various frequency bands as indicated by K numbers at the left. Table 5 presents the relationship between these K numbers and the central frequencies of the individual bands.

It should be noted that the coherence estimate for W at K = 0 for Run 90A, 301 Point Running Mean, 10 Point Block Average is unreasonably large and should be disregarded.

TABLE 5
ADJUSTED FREQUENCY FANDS FOR SPECTRAL AND COSPECTRAL ESTIMATES

60-LAG ANALYSIS

| K | f_k (cycles sec ⁻¹) | K | f_k (cycles sec ⁻¹) |
|-----|-----------------------------------|-------|-----------------------------------|
| 1 | 0.0069 | 9-11 | 0.0694 |
| 2 | 0.0139 | 12-15 | 0.0937 |
| 3 | 0.0208 | 16-20 | 0.1250 |
| 4 | 0.0278 | 21-27 | 0.1667 |
| 5 | 0.0347 | 28-36 | 0.2222 |
| 6 | 0.0417 | 37-47 | 0.2917 |
| 7-8 | 0.0521 | 48-60 | 0.3750 |

30-LAG ANALYSIS

| K | f_k (cycles sec ⁻¹) | K | f_k (cycles sec ⁻¹) |
|---|-----------------------------------|-------|-----------------------------------|
| 1 | 0.0014 | 7 | 0.0097 |
| 2 | 0.0028 | 8 | 0.0111 |
| 3 | 0.0042 | 9-11 | 0.0139 |
| 4 | 0.0056 | 12-14 | 0.0181 |
| 5 | 0.0069 | 15-21 | 0.0250 |
| 6 | 0.0083 | 22-30 | 0.0361 |

4. Data summaries for Runs 87A through 95A.

The turbulence statistics for Runs 87A through 95A appear on pages 42 through 245.

RUN NO 87A 46M 6-14-63 1401-1502(EST)

GROSS STATISTICS

| | | |
|---------------------|------------------------|------------------|
| 4 AS CU UNSTABLE | WIND SPEED 4.83 M/SEC | SIGMA A 8.4 DEG |
| | WIND DIRECTION 214 DEG | SIGMA E 7.90 DEG |
| | SOLAR RAD. 1.14 LY/MIN | |

| | | | | |
|-------------------------|--------------------------------|-------------------------------|-----------------|------------------|
| WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN | 301 PT BLOCK AVG |
|-------------------------|--------------------------------|-------------------------------|-----------------|------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.10412E 01 | 0.52897E 00 | 0.33436E-00 | 0.38352E-00 |
| V | 0.39635E-00 | 0.36510E-00 | 0.28072E-00 | 0.21661E-00 |
| W | 0.32012E-00 | 0.26343E-00 | 0.20821E-00 | 0.14339E-00 |
| T | 0.23321E-00 | 0.25660E-01 | 0.14050E-01 | 0.20301E-01 |
| E | 0.87882E 00 | 0.57878E 00 | 0.41165E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.21126 | 0.15058 | 0.11972 | 0.12822 |
| V | 0.13034 | 0.12510 | 0.10970 | 0.09636 |
| W | 0.11714 | 0.10626 | 0.09447 | 0.07840 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.17111E-00 | 0.35281E-01 | 0.36109E-01 | 0.27891E-01 |
| U,W | -0.29183E-00 | -0.14785E-00 | -0.94944E-01 | -0.11485E-00 |
| U,T | -0.35768E-00 | -0.77110E-01 | -0.41148E-01 | -0.53593E-01 |
| V,W | -0.36989E-01 | -0.64063E-02 | -0.68512E-02 | -0.13540E-02 |
| V,T | -0.78532E-01 | 0.27765E-02 | 0.31295E-02 | -0.30577E-03 |
| W,T | 0.97034E-01 | 0.20997E-01 | 0.11039E-01 | 0.19958E-01 |
| WE | 0.15302E-00 | 0.50527E-01 | 0.33294E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.26636 | 0.08028 | 0.11786 | 0.09677 |
| U,W | -0.50548 | -0.39608 | -0.35984 | -0.48974 |
| U,T | -0.72587 | -0.66186 | -0.60035 | -0.72071 |
| V,W | -0.10384 | -0.02066 | -0.02834 | -0.00768 |
| V,T | -0.25831 | 0.02869 | 0.04977 | -0.00461 |
| W,T | 0.35514 | 0.25539 | 0.20410 | 0.36987 |

RUN NO 87A 46M 6-14-63 1401-1502(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.30638 10E 00 | 0.26385 10E 00 | 0.68531 10E-01 | 0.24179 10E 00 | 0.62802 10E-01 | 0.54085 10E-01 |
| 0 | .117684 | -.359935 | -.600185 | -.028177 | .050072 | .204125 |
| 1 | .120408 | -.334507 | -.541008 | -.020412 | .028231 | .213389 |
| 2 | .117621 | -.289995 | -.458577 | -.008985 | .006812 | .211002 |
| 3 | .104014 | -.241658 | -.394392 | .002268 | -.008837 | .194215 |
| 4 | .091452 | -.192887 | -.339385 | .014228 | -.020684 | .171691 |
| 5 | .077622 | -.150995 | -.288758 | .019973 | -.030644 | .147393 |
| 6 | .061044 | -.120329 | -.238804 | .027227 | -.035815 | .125597 |
| 7 | .044199 | -.080510 | -.193418 | .032904 | -.041650 | .100198 |
| 8 | .027395 | -.038362 | -.156205 | .025623 | -.042596 | .071607 |
| 9 | .011624 | -.006730 | -.111749 | .011366 | -.036638 | .049129 |
| 10 | .003534 | .007900 | -.065569 | -.003338 | -.031741 | .035005 |
| 11 | -.007179 | .024479 | .024169 | -.010561 | -.022469 | .017387 |
| 12 | -.016963 | .051703 | .020907 | -.008256 | -.013254 | -.012683 |
| 13 | -.030734 | .084654 | .069110 | -.003618 | -.003552 | -.043314 |
| 14 | -.048672 | .101552 | .098016 | -.000923 | .009878 | -.064774 |
| 15 | -.064431 | .108128 | .118673 | .004380 | .026341 | -.078665 |
| 16 | -.076987 | .106775 | .137475 | .010607 | .044519 | -.087376 |
| 17 | -.084990 | .103949 | .161411 | .020336 | .062519 | -.093334 |
| 18 | -.091617 | .100676 | .187519 | .022172 | .073595 | -.093258 |
| 19 | -.099772 | .102114 | .205630 | .018181 | .077387 | -.096196 |
| 20 | -.105143 | .113744 | .216849 | .011658 | .069531 | -.099707 |
| 21 | -.111760 | .130091 | .223348 | -.001177 | .062929 | -.108550 |
| 22 | -.112260 | .139330 | .223903 | -.007230 | .052587 | -.114036 |
| 23 | -.109307 | .146824 | .221420 | -.012649 | .040040 | -.118341 |
| 24 | -.102609 | .151783 | .222332 | -.017065 | .027249 | -.117273 |
| 25 | -.091528 | .154466 | .223811 | -.017370 | .018537 | -.113176 |
| 26 | -.081775 | .154960 | .221768 | -.011881 | .010317 | -.105386 |
| 27 | -.074235 | .147949 | .214887 | -.008047 | .005038 | -.097882 |
| 28 | -.060622 | .139659 | .204293 | -.010554 | .004265 | -.095660 |
| 29 | -.047515 | .128459 | .185569 | -.007457 | .008078 | -.083193 |
| 30 | -.032192 | .099600 | .166278 | -.007232 | .010589 | -.066505 |
| 31 | -.013863 | .069615 | .147165 | -.011123 | .009561 | -.054037 |
| 32 | .003026 | .042127 | .127527 | -.020153 | .009445 | -.043574 |
| 33 | .017363 | .013970 | .108563 | -.024814 | .007106 | -.028747 |
| 34 | .032473 | -.008292 | .089304 | -.031165 | .002957 | -.012303 |
| 35 | .044947 | -.022708 | .065675 | -.040123 | -.000448 | .002475 |
| 36 | .052102 | -.041730 | .040215 | -.037206 | -.004346 | .016344 |
| 37 | .055127 | -.064756 | .015 | -.028622 | -.016124 | .024841 |
| 38 | .055280 | -.081904 | -.000281 | -.021427 | -.026490 | .031886 |
| 39 | .057545 | -.087019 | -.014696 | -.015498 | -.035997 | .039280 |
| 40 | .058851 | -.091579 | -.034482 | -.013058 | -.038051 | .047417 |
| 41 | .062920 | -.090996 | -.045488 | -.009090 | -.037827 | .050800 |
| 42 | .064942 | -.083521 | -.052590 | -.006448 | -.034997 | .049669 |
| 43 | .067651 | -.077376 | -.055531 | -.004500 | -.028520 | .043553 |
| 44 | .073507 | -.076376 | -.056775 | -.002203 | -.027528 | .044666 |
| 45 | .080996 | -.071739 | -.059754 | -.004021 | -.031078 | .036750 |
| 46 | .085346 | -.064858 | -.062914 | .006341 | -.040381 | .031379 |
| 47 | .081257 | -.061757 | -.059866 | .019215 | -.044910 | .036239 |
| 48 | .064482 | -.061398 | -.054519 | .025229 | -.043134 | .044313 |
| 49 | .044909 | -.057468 | -.046366 | .022496 | -.031260 | .042682 |
| 50 | .032566 | -.059943 | -.046361 | .018006 | -.026387 | .032939 |
| 51 | .023550 | -.059463 | -.053146 | .020001 | -.027972 | .020977 |
| 52 | .015570 | -.051297 | -.051490 | .024472 | -.027476 | .009716 |
| 53 | .006788 | -.034338 | -.042852 | .023778 | -.027713 | -.000693 |
| 54 | .003542 | -.022532 | -.038802 | .025844 | -.024199 | -.006150 |
| 55 | .000183 | -.020441 | -.035642 | .027407 | -.025081 | -.005310 |
| 56 | -.004118 | -.021920 | -.031880 | .024349 | -.025119 | -.003625 |
| 57 | -.020615 | -.022240 | -.029049 | .015745 | -.019917 | .000080 |
| 58 | -.033297 | -.013038 | -.027658 | .002232 | -.012826 | .001742 |
| 59 | -.042293 | -.003088 | -.028066 | -.004070 | -.014962 | .002134 |
| 60 | -.043462 | .004264 | -.029355 | -.005278 | -.018544 | .010284 |

RUN NO 87A 46M 6-14-63 1401-1502(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.30638 10E 00 | 0.26385 10E 00 | 0.68531 10E-01 | 0.24179 10E 00 | 0.62802 10E-01 | 0.54085 10E-01 |
| 1 | -.000091 | -.022405 | -.027873 | -.002742 | .019239 | .004853 |
| 2 | .001260 | -.042651 | -.042497 | -.004590 | .030825 | .009616 |
| 3 | .005088 | -.059080 | -.056208 | -.013657 | .037294 | .016469 |
| 4 | .009293 | -.074166 | -.065492 | -.018314 | .037766 | .015500 |
| 5 | .016546 | -.077841 | -.071974 | -.017161 | .035322 | .031899 |
| 6 | .022332 | -.072848 | -.076897 | -.017800 | .034114 | .042730 |
| 7 | .023077 | -.056450 | -.077003 | -.023252 | .049352 | .044102 |
| 8 | .018434 | -.040388 | -.080244 | -.026691 | .054794 | .044814 |
| 9 | .023938 | -.031765 | -.078679 | -.021449 | .060482 | .046585 |
| 10 | .037223 | -.028521 | -.075552 | -.015271 | .064055 | .048841 |
| 11 | .048285 | -.026406 | -.078321 | -.012834 | .058720 | .049887 |
| 12 | .056034 | -.031359 | -.083028 | -.007887 | .051924 | .050039 |
| 13 | .057502 | -.037381 | -.079343 | -.002603 | .046614 | .052634 |
| 14 | .056301 | -.034897 | -.070044 | .000439 | .040492 | .057532 |
| 15 | .053741 | -.024642 | -.068483 | .002217 | .034074 | .057068 |
| 16 | .050855 | -.017548 | -.072515 | -.002258 | .037200 | .053176 |
| 17 | .043058 | -.013493 | -.064571 | -.008494 | .038537 | .049309 |
| 18 | .036998 | -.007745 | -.052603 | -.011401 | .038916 | .046157 |
| 19 | .028934 | -.007887 | -.045235 | -.011511 | .039768 | .040372 |
| 20 | .025230 | -.014192 | -.038820 | -.002203 | .039519 | .034412 |
| 21 | .023379 | -.018060 | -.031143 | .003107 | .045201 | .024711 |
| 22 | .020704 | -.025823 | -.025901 | .002854 | .048510 | .013671 |
| 23 | .022207 | -.030870 | -.025433 | -.000071 | .052536 | .004387 |
| 24 | .029887 | -.024898 | -.018256 | .000178 | .054999 | -.006789 |
| 25 | .038645 | -.016228 | -.003640 | -.001836 | .056097 | -.016126 |
| 26 | .047872 | -.010596 | .011969 | .002132 | .054144 | -.029799 |
| 27 | .056617 | .002207 | .021948 | .015173 | .051183 | -.036923 |
| 28 | .053248 | .019487 | .022296 | .027873 | .045051 | -.035002 |
| 29 | .048915 | .029809 | .020674 | .030947 | .036217 | -.029978 |
| 30 | .045147 | .030110 | .022308 | .028437 | .027257 | -.024769 |
| 31 | .034052 | .027912 | .018741 | .024381 | .018302 | -.021693 |
| 32 | .022994 | .028030 | .018750 | .023941 | .011729 | -.020721 |
| 33 | .013004 | .024282 | .016514 | .017718 | .005632 | -.017763 |
| 34 | -.005832 | .025659 | .012542 | .007464 | .000283 | -.018411 |
| 35 | -.027427 | .021906 | .009798 | -.011298 | -.001760 | -.018763 |
| 36 | -.039917 | .010309 | .006446 | -.026744 | -.009240 | -.022648 |
| 37 | -.050457 | -.003758 | -.003875 | -.035532 | -.019424 | -.029226 |
| 38 | -.058842 | -.010214 | -.016024 | -.040146 | -.025919 | -.032567 |
| 39 | -.065574 | -.010243 | -.023522 | -.047622 | -.031150 | -.027378 |
| 40 | -.067716 | -.007443 | -.027507 | -.050077 | -.037464 | -.025526 |
| 41 | -.062256 | -.010897 | -.025657 | -.051955 | -.038636 | -.026193 |
| 42 | -.052251 | -.011804 | -.021835 | -.054222 | -.036427 | -.026923 |
| 43 | -.042740 | -.006994 | -.019476 | -.052387 | -.031851 | -.024575 |
| 44 | -.028800 | .001663 | -.013119 | -.049401 | -.028921 | -.022225 |
| 45 | -.016418 | .001712 | -.003534 | -.045037 | -.029672 | -.023970 |
| 46 | -.003674 | -.006620 | .007325 | -.035334 | -.025154 | -.028636 |
| 47 | -.002881 | -.007464 | .010236 | -.023945 | -.023391 | -.036614 |
| 48 | -.010663 | -.004404 | .006310 | -.011544 | -.025298 | -.038448 |
| 49 | -.011730 | -.011248 | -.000176 | -.001743 | -.027189 | -.036053 |
| 50 | -.011451 | -.017622 | -.004711 | .007451 | -.027102 | -.029330 |
| 51 | -.009864 | -.022774 | -.006208 | .019089 | -.029346 | -.027370 |
| 52 | -.006896 | -.019806 | -.007618 | .030554 | -.028093 | -.025880 |
| 53 | -.011778 | -.007063 | -.007004 | .033374 | -.027937 | -.016949 |
| 54 | -.021941 | .003101 | .001186 | .033525 | -.031672 | -.002435 |
| 55 | -.023109 | .007710 | .010763 | .027588 | -.036360 | -.020041 |
| 56 | -.020247 | .008901 | .014727 | .023386 | -.038016 | .037500 |
| 57 | -.018456 | .010231 | .015362 | .028413 | -.037812 | .044984 |
| 58 | -.013631 | .012744 | .021504 | .027716 | -.035246 | .042989 |
| 59 | -.017954 | .017324 | .025671 | .024171 | -.032192 | .047893 |
| 60 | -.020910 | .022723 | .021659 | .023130 | -.028194 | .050295 |

RUN NO 87A 46M 6-14-63 1401-1502(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.33433 10E 00 | 0.28076 10E 00 | 0.20823 10E 00 | 0.14048 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .847380 | .837941 | .805663 | .867168 |
| 2 | .661145 | .624542 | .573277 | .724948 |
| 3 | .531677 | .460170 | .402196 | .614145 |
| 4 | .431789 | .330474 | .269901 | .524331 |
| 5 | .350659 | .228900 | .168797 | .445065 |
| 6 | .282635 | .158795 | .094473 | .368698 |
| 7 | .218443 | .104423 | .036197 | .301702 |
| 8 | .162827 | .060370 | -.011047 | .242638 |
| 9 | .100506 | .019033 | -.040692 | .182612 |
| 10 | .041298 | -.021164 | -.070317 | .115823 |
| 11 | -.008311 | -.056665 | -.095960 | .058724 |
| 12 | -.065416 | -.091843 | -.118077 | -.004094 |
| 13 | -.116296 | -.118583 | -.124867 | -.067146 |
| 14 | -.154456 | -.145056 | -.123418 | -.110458 |
| 15 | -.185741 | -.171558 | -.129364 | -.142834 |
| 16 | -.219113 | -.189686 | -.134446 | -.171593 |
| 17 | -.251998 | -.201997 | -.141677 | -.200043 |
| 18 | -.276885 | -.218992 | -.150309 | -.231043 |
| 19 | -.296951 | -.236107 | -.171881 | -.257448 |
| 20 | -.317642 | -.252949 | -.186158 | -.278512 |
| 21 | -.332841 | -.263629 | -.198011 | -.292044 |
| 22 | -.336274 | -.268971 | -.213505 | -.308066 |
| 23 | -.335562 | -.272124 | -.227334 | -.324039 |
| 24 | -.339165 | -.266807 | -.233880 | -.337264 |
| 25 | -.338435 | -.255669 | -.240245 | -.342203 |
| 26 | -.318545 | -.245884 | -.261483 | -.348693 |
| 27 | -.290908 | -.228696 | -.231974 | -.349100 |
| 28 | -.265916 | -.209184 | -.215085 | -.337487 |
| 29 | -.232377 | -.184348 | -.179172 | -.316967 |
| 30 | -.192896 | -.155808 | -.127415 | -.293742 |
| 31 | -.154040 | -.127440 | -.074699 | -.266007 |
| 32 | -.119170 | -.106178 | -.035110 | -.240207 |
| 33 | -.089534 | -.083102 | -.007013 | -.214733 |
| 34 | -.060766 | -.056043 | .021032 | -.196403 |
| 35 | -.033487 | -.029300 | .041301 | -.176531 |
| 36 | -.005384 | -.005294 | .041170 | -.142264 |
| 37 | .023967 | .002069 | .034491 | -.107227 |
| 38 | .043821 | .006686 | .032929 | -.084883 |
| 39 | .059809 | .019784 | .036699 | -.062624 |
| 40 | .079800 | .044219 | .048953 | -.039197 |
| 41 | .088241 | .074432 | .047809 | -.017631 |
| 42 | .092534 | .108385 | .029686 | .001424 |
| 43 | .095628 | .129953 | .023861 | .016208 |
| 44 | .098387 | .136468 | .027551 | .030277 |
| 45 | .097767 | .136758 | .034006 | .046583 |
| 46 | .093445 | .129021 | .036208 | .060292 |
| 47 | .082674 | .117547 | .044192 | .077226 |
| 48 | .081226 | .101660 | .059044 | .090630 |
| 49 | .072756 | .093111 | .078149 | .104925 |
| 50 | .065717 | .088576 | .097140 | .116631 |
| 51 | .070648 | .078810 | .102644 | .123851 |
| 52 | .061946 | .069814 | .092182 | .119255 |
| 53 | .041623 | .058317 | .078403 | .104604 |
| 54 | .029533 | .039678 | .065018 | .096776 |
| 55 | .029229 | .024788 | .040749 | .087919 |
| 56 | .028950 | .013700 | .024672 | .079044 |
| 57 | .029671 | .002251 | .019789 | .070133 |
| 58 | .024560 | -.018725 | .016738 | .073522 |
| 59 | .018377 | -.039879 | .016115 | .070655 |
| 60 | .014075 | -.053421 | .009375 | .067102 |

RUN NO 87A 46M 0-14-63 1401-1502(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 1GE-02 | 10E-02 | 10E-02 |
| 0 | -.005779 | -.007967 | -.071109 | -.004315 | .016709 | .025199 |
| 1 | .018720 | -.109002 | -.750309 | .132101 | .030202 | .237372 |
| 2 | .109675 | -.200007 | -.973011 | .130800 | -.066597 | .342150 |
| 3 | .157175 | -.233348 | -.914823 | -.046610 | -.103008 | .361927 |
| 4 | .067383 | -.115668 | -.438502 | -.100359 | -.018601 | .168989 |
| 5 | .002433 | -.056148 | -.200397 | -.004307 | .054628 | .053039 |
| 6 | .002737 | -.070954 | -.159355 | -.025289 | .093033 | .042339 |
| 7-8 | .011381 | -.038149 | -.092958 | -.053987 | .068911 | .010702 |
| 9-11 | .004455 | -.012952 | -.066380 | -.166607 | .006118 | .002734 |
| 12-15 | -.001560 | -.011793 | -.051398 | -.006685 | .015628 | .002623 |
| 16-20 | -.000058 | -.003966 | -.022998 | .007594 | .006295 | -.005300 |
| 21-27 | -.000011 | -.002445 | -.019617 | -.019918 | .005984 | -.002774 |
| 28-34 | -.000925 | -.000931 | -.012227 | .002846 | .003201 | -.002671 |
| 37-47 | -.000707 | -.000899 | -.006452 | -.007220 | .003180 | -.002091 |
| 48-60 | .000041 | -.000410 | -.003226 | -.000158 | .002102 | -.001124 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .767451 | -.367253 | -.220037 | -.120086 | .211224 | .063894 |
| 2 | .684862 | -.423450 | -.209865 | -.031568 | .167865 | .120265 |
| 3 | .209706 | -.470053 | -.206974 | -.191243 | .067899 | .111253 |
| 4 | -.083389 | -.283796 | -.115661 | -.177013 | .019280 | .039615 |
| 5 | .119053 | -.189103 | -.021138 | .040276 | .050821 | -.012024 |
| 6 | -.021914 | -.295569 | -.018244 | -.071058 | .044835 | -.022344 |
| 7-8 | -.196940 | -.208591 | -.030012 | -.072491 | .000163 | .008377 |
| 9-11 | .066903 | -.119488 | -.013400 | .020366 | -.000535 | -.003716 |
| 12-15 | -.008581 | .003594 | -.004420 | .008919 | .011533 | -.004079 |
| 16-20 | -.031909 | .021996 | -.002445 | .001829 | .006071 | -.000008 |
| 21-27 | .014614 | -.000185 | -.003325 | .010582 | .000355 | .002150 |
| 28-34 | -.008274 | -.001880 | -.001811 | -.002020 | -.000392 | -.001191 |
| 37-47 | .001808 | -.003696 | -.001716 | -.005107 | .001301 | -.000089 |
| 48-60 | .001382 | .003420 | -.000270 | -.001663 | .000140 | .000775 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .037170 | .020472 | .012836 | .027342 |
| 1 | .443569 | .282601 | .173801 | .274483 |
| 2 | .636609 | .436845 | .267493 | .321084 |
| 3 | .661074 | .470698 | .301515 | .267341 |
| 4 | .345596 | .273297 | .191972 | .124818 |
| 5 | .156440 | .170607 | .122596 | .070842 |
| 6 | .139474 | .154166 | .137530 | .058633 |
| 7-8 | .114853 | .131548 | .123486 | .037775 |
| 9-11 | .073489 | .086375 | .064741 | .024005 |
| 12-15 | .055847 | .057720 | .045095 | .019066 |
| 16-20 | .035158 | .032821 | .026526 | .010024 |
| 21-27 | .023554 | .018791 | .017898 | .007824 |
| 28-34 | .014869 | .012667 | .010997 | .005238 |
| 37-47 | .009456 | .007531 | .007260 | .003559 |
| 48-60 | .004977 | .004306 | .004589 | .002663 |

RUN NO 87A 46M 6-14-63 1401-1502(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.28829 10E 00 | 0.23456 10E 00 | 0.88202 10E-01 | 0.17631 10E 00 | 0.66297 10E-01 | 0.53942 10E-01 |
| 0 | .096746 | -.489615 | -.720998 | -.007680 | -.004612 | .369948 |
| 1 | .037317 | -.234304 | -.423498 | .006751 | -.039198 | .206377 |
| 2 | -.051307 | -.071966 | -.162770 | .008108 | .011266 | .054718 |
| 3 | .004699 | -.012057 | -.035365 | -.050672 | -.036622 | -.012548 |
| 4 | .073990 | -.099863 | -.028926 | -.017423 | -.061377 | .030063 |
| 5 | .064094 | -.012692 | .026661 | .004240 | -.070109 | -.051208 |
| 6 | -.000824 | .065459 | .054142 | .008040 | -.030287 | -.058972 |
| 7 | -.004930 | .127211 | .109482 | .000255 | .035859 | -.123681 |
| 8 | -.039192 | .134894 | .134629 | -.008367 | .074875 | -.126540 |
| 9 | -.052924 | .087344 | .143831 | -.002500 | .082308 | -.057166 |
| 10 | -.064784 | -.023106 | .086534 | -.027557 | .047577 | .020622 |
| 11 | .009724 | -.029977 | .050668 | -.051625 | -.038855 | .053161 |
| 12 | .015428 | -.013743 | .056603 | -.009579 | -.009738 | .056284 |
| 13 | -.016555 | .112031 | .162452 | .067029 | .032243 | -.014326 |
| 14 | -.057190 | .062793 | .067703 | .064373 | .008962 | .000375 |
| 15 | -.023800 | -.013088 | -.043912 | .047222 | -.026249 | .026570 |
| 16 | -.028398 | -.058949 | -.131502 | .050774 | -.038837 | .050448 |
| 17 | -.056286 | -.005702 | -.027522 | .015087 | .023951 | -.022790 |
| 18 | -.028422 | .078527 | .098530 | -.011046 | .048805 | -.085529 |
| 19 | .039733 | .167339 | .164658 | .038877 | .014048 | -.141826 |
| 20 | .167359 | .107144 | .136067 | -.015244 | -.074576 | -.137436 |
| 21 | .136749 | .063100 | .069072 | -.054845 | -.112451 | -.074978 |
| 22 | .036616 | .082331 | .042888 | .001192 | -.059208 | -.079425 |
| 23 | .004223 | .164287 | .082124 | -.052652 | .001386 | -.126920 |
| 24 | -.034515 | .084436 | .040677 | -.034253 | .044085 | -.032669 |
| 25 | -.016213 | .033037 | -.035296 | -.019079 | .054076 | .036428 |
| 26 | -.022496 | -.095491 | -.145678 | -.041753 | .007518 | .155145 |
| 27 | -.007761 | -.117780 | -.141787 | -.022163 | -.004488 | .146507 |
| 28 | -.006854 | -.115812 | -.158562 | .012433 | .026229 | .092358 |
| 29 | -.030416 | -.125798 | -.104881 | -.029510 | .066431 | .063516 |
| 30 | -.045102 | -.130471 | -.065522 | -.016001 | .011891 | .047621 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|---------|
| | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .041322 | -.011269 | -.085357 | -.004940 | -.016562 | .012504 |
| 1 | .156053 | -.123871 | -.664436 | -.097606 | -.049899 | .171291 |
| 2 | .381946 | -.113703 | -.699558 | -.143460 | -.068053 | .150651 |
| 3 | .476829 | -.107133 | -.756739 | .006375 | -.106944 | .152980 |
| 4 | -.029939 | -.131949 | -.756680 | .159510 | -.049540 | .290958 |
| 5 | -.079627 | -.100592 | -.503931 | -.024124 | .010569 | .274011 |
| 6 | -.005387 | -.053718 | -.284090 | -.139290 | .075151 | .125713 |
| 7 | -.443508 | -.035822 | -.383104 | .004057 | .143113 | .078998 |
| 8 | -.222488 | -.008742 | -.340750 | .179747 | .070915 | .035235 |
| 9-11 | .327720 | -.044965 | -.281890 | .062702 | -.044171 | .092150 |
| 12-14 | .306231 | -.058029 | -.179209 | .049466 | -.015270 | .088527 |
| 15-21 | .202444 | -.029280 | -.127676 | -.091688 | -.008918 | .046736 |
| 22-30 | -.037373 | -.020800 | -.075094 | .014499 | .034668 | .016494 |

RUN NO 87A 46M 6-14-63 1401-1502(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.28829 10E 00 | 0.23456 10E 00 | 0.88202 10E-01 | 0.17631 10E 00 | 0.66297 10E-01 | 0.53942 10E-01 |
| 1 | .072861 | -.039297 | -.125987 | -.010356 | .100808 | .065536 |
| 2 | .106635 | -.045928 | -.149796 | -.033940 | .131195 | .058899 |
| 3 | .081426 | -.036826 | -.131637 | .011874 | .111860 | .006959 |
| 4 | .020032 | -.036043 | -.146942 | -.053944 | .051289 | .023071 |
| 5 | .018645 | -.034070 | -.106474 | .025900 | .017692 | .020968 |
| 6 | -.005344 | .007742 | -.066179 | .046644 | -.011254 | .078717 |
| 7 | .015064 | .021871 | -.042156 | .067268 | .025144 | .050363 |
| 8 | -.017444 | -.014768 | -.016095 | -.075059 | .024464 | .016768 |
| 9 | -.037104 | -.039642 | -.002012 | -.083096 | .022978 | -.022240 |
| 10 | -.033506 | -.032231 | .029016 | -.014273 | -.010264 | -.080868 |
| 11 | .000557 | -.016432 | .031014 | .021078 | .000488 | -.027086 |
| 12 | .045811 | -.018952 | .040632 | .074615 | .057315 | -.034351 |
| 13 | .032989 | -.041399 | .033717 | .045659 | .020177 | -.033115 |
| 14 | -.005342 | -.055127 | .063910 | -.042623 | -.063153 | -.061325 |
| 15 | .036193 | -.029785 | .081946 | -.045944 | -.061966 | -.039197 |
| 16 | .044399 | .047813 | .032661 | -.020904 | .002254 | .056690 |
| 17 | .042204 | .056004 | -.051998 | .016310 | .048654 | .106046 |
| 18 | .077573 | .059076 | -.055897 | .045631 | .085790 | .102148 |
| 19 | .082540 | .035446 | -.005639 | .059821 | .117909 | .044430 |
| 20 | .007472 | -.018615 | .031292 | .037868 | .041805 | -.037964 |
| 21 | -.079974 | -.054556 | .040827 | -.023837 | -.071870 | -.054581 |
| 22 | -.093166 | .010318 | .031689 | .013340 | -.112089 | -.003675 |
| 23 | -.043151 | .027417 | .034388 | -.013811 | -.070593 | -.000210 |
| 24 | .001069 | .017732 | .063422 | -.080871 | -.007542 | -.053408 |
| 25 | -.069222 | .021951 | .046560 | -.088043 | -.058052 | -.092677 |
| 26 | -.097012 | .014150 | .025110 | -.059172 | -.044386 | -.106451 |
| 27 | -.022597 | -.020240 | -.016908 | -.002857 | -.043639 | -.075943 |
| 28 | -.013667 | -.030701 | -.031575 | -.008971 | -.006269 | -.034645 |
| 29 | -.046708 | -.069351 | -.051256 | -.020748 | -.035516 | -.031710 |
| 30 | -.056718 | -.087090 | -.013949 | .005507 | -.093610 | -.076343 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .430361 | -.310294 | -.097564 | .012228 | .121280 | .024347 |
| 2 | .194270 | -.308704 | -.240922 | -.033966 | .105582 | .029659 |
| 3 | .077759 | -.162011 | -.378950 | -.055671 | .107895 | .068906 |
| 4 | .560910 | .000962 | -.400487 | .035420 | .156195 | .135958 |
| 5 | .691208 | -.156728 | -.254555 | -.018559 | .108931 | .051213 |
| 6 | .402835 | -.374211 | -.126738 | -.004064 | .089367 | -.054257 |
| 7 | .428727 | -.214059 | -.160082 | -.025838 | .192728 | -.014207 |
| 8 | .307286 | -.019249 | -.125363 | -.316925 | .135982 | .036339 |
| 9-11 | .291623 | -.039306 | -.052020 | -.012209 | .081462 | .047469 |
| 12-14 | .058732 | -.024684 | -.025967 | .096818 | -.017510 | .037007 |
| 15-21 | -.018448 | -.037187 | -.043451 | -.057442 | .013422 | .011950 |
| 22-30 | .027013 | -.008501 | .006956 | .112815 | .007614 | -.009871 |

RUN NO 87A 46M 6-14-63 1401-1502(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.38354 10E 00 | 0.21669 10E 00 | 0.14345 10E 00 | 0.20283 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .524003 | .349745 | .349740 | .597201 |
| 2 | .178449 | .017115 | .079508 | .212778 |
| 3 | .072631 | -.030721 | .002744 | -.031909 |
| 4 | .081926 | -.021835 | .013233 | -.080798 |
| 5 | -.007016 | -.023372 | .015125 | -.094849 |
| 6 | -.062265 | -.113481 | -.058189 | -.117252 |
| 7 | -.131883 | -.149776 | -.152724 | -.152417 |
| 8 | -.176658 | -.124569 | -.183708 | -.175404 |
| 9 | -.209267 | -.194867 | -.098668 | -.142553 |
| 10 | -.133451 | -.226073 | -.021674 | -.060875 |
| 11 | -.077888 | -.197716 | -.023896 | -.047990 |
| 12 | -.013399 | -.123012 | -.068067 | -.077308 |
| 13 | -.193859 | -.102368 | -.107301 | -.185419 |
| 14 | -.128677 | -.080988 | -.061643 | -.089204 |
| 15 | -.050666 | -.010687 | -.047005 | .083387 |
| 16 | .363707 | .096513 | -.071669 | .199830 |
| 17 | -.076705 | .038999 | -.076078 | .117455 |
| 18 | -.192199 | .003843 | -.102049 | -.025818 |
| 19 | -.209306 | .156372 | -.192143 | -.124752 |
| 20 | -.129706 | .169025 | -.059473 | -.142702 |
| 21 | -.070451 | .188150 | -.051839 | -.104084 |
| 22 | -.023709 | .149573 | -.052964 | -.065532 |
| 23 | -.097714 | .120590 | -.078561 | -.051148 |
| 24 | -.016636 | .130632 | .016494 | -.003421 |
| 25 | .075486 | .049020 | .070899 | .078589 |
| 26 | .164620 | -.087324 | .168123 | .167284 |
| 27 | .165621 | -.090081 | .163630 | .178477 |
| 28 | .262735 | -.198253 | .078249 | .111090 |
| 29 | .190647 | -.155623 | .045372 | .009427 |
| 30 | .131080 | -.098425 | .062387 | -.065845 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .035528 | .002527 | .007615 | .026664 |
| 1 | .399427 | .039997 | .104807 | .158955 |
| 2 | .450311 | .151047 | .120522 | .174617 |
| 3 | .426801 | .257162 | .111798 | .227959 |
| 4 | .381535 | .176511 | .109798 | .244935 |
| 5 | .288862 | .101520 | .103094 | .176024 |
| 6 | .165404 | .092136 | .071324 | .133169 |
| 7 | .160877 | .094871 | .056152 | .170093 |
| 8 | .158151 | .117401 | .046948 | .128460 |
| 9-11 | .175588 | .105837 | .065244 | .096555 |
| 12-14 | .120943 | .098336 | .067581 | .056654 |
| 15-21 | .099364 | .069720 | .041639 | .030698 |
| 22-30 | .058634 | .060325 | .042259 | .025038 |

RUN NO 87A 91M 6-14-63 1401-1502(EST)

GROSS STATISTICS

4 AS CU
UNSTABLE WIND SPEED 5.31 M/SEC SIGMA A 5.8 DEG
 WIND DIRECTION 217 DEG SIGMA E 6.1 DEG
 SOLAR RAD. 1.14 LY/MIN

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.79301E 00 | 0.34089E-00 | 0.21153E-00 | 0.25132E-00 |
| V | 0.25804E-00 | 0.21217E-00 | 0.17502E-00 | 0.12921E-00 |
| W | 0.26006E-00 | 0.20558E-00 | 0.17510E-00 | 0.11800E-00 |
| T | 0.17380E-00 | 0.18931E-01 | 0.11119E-01 | 0.13245E-01 |
| E | 0.65806E 00 | 0.37934E-00 | 0.28083E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.16823 | 0.10995 | 0.08661 | 0.09441 |
| V | 0.09567 | 0.08675 | 0.07879 | 0.06769 |
| W | 0.09604 | 0.08539 | 0.07880 | 0.06469 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.11824E-00 | 0.30554E-01 | 0.23851E-01 | 0.24872E-01 |
| U,W | -0.20321E-00 | -0.11981E-00 | -0.73193E-01 | -0.99439E-01 |
| U,T | -0.24515E-00 | -0.21281E-01 | -0.69331E-02 | -0.16274E-01 |
| V,W | -0.53853E-01 | -0.28404E-01 | -0.29679E-01 | -0.94360E-02 |
| V,T | -0.62734E-01 | 0.93191E-02 | 0.87233E-02 | 0.34068E-02 |
| W,T | 0.37884E-01 | -0.28348E-01 | -0.27263E-01 | -0.14324E-01 |
| WE | 0.14715E-00 | 0.11879E-00 | 0.51399E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.26056 | 0.11361 | 0.12396 | 0.13802 |
| U,W | -0.44607 | -0.45258 | -0.38031 | -0.57744 |
| U,T | -0.65826 | -0.26491 | -0.14296 | -0.28207 |
| V,W | -0.20788 | -0.13600 | -0.16953 | -0.07642 |
| V,T | -0.29623 | 0.14704 | 0.19774 | 0.08235 |
| W,T | 0.17819 | -0.45439 | -0.61786 | -0.36232 |

RUN NO 87A 91M 6-14-63 1401-1502(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED CO-SPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|--------------------|-------------------|--------------------|--------------------|
| | 0.19245 10E 00 | 0.19249 10E 00 | 0.48516 10E -01 | 0.17506 10E 00 | 0.44124 10E -01 | 0.44133 10E -01 |
| 0 | .124424 | -.380488 | -.142808 | -.170117 | .197898 | -.617810 |
| 1 | .125096 | -.364364 | -.106466 | -.149855 | .161384 | -.516967 |
| 2 | .123768 | -.337586 | -.060080 | -.113544 | .106012 | -.376444 |
| 3 | .116276 | -.301546 | -.033233 | -.080017 | .060576 | -.264210 |
| 4 | .105086 | -.258984 | -.016109 | -.047727 | .026674 | -.184831 |
| 5 | .085869 | -.219525 | -.004483 | -.017315 | -.001863 | -.119126 |
| 6 | .064958 | -.177547 | .001971 | .008493 | -.019707 | -.065738 |
| 7 | .042753 | -.131351 | .005067 | .029212 | -.035738 | -.024924 |
| 8 | .020802 | -.090686 | .002032 | .045408 | -.046507 | .014763 |
| 9 | .006649 | -.054106 | -.002622 | .056454 | -.052751 | .052631 |
| 10 | -.000618 | -.024117 | -.005619 | .064500 | -.060991 | .087924 |
| 11 | -.007875 | .004170 | -.007162 | .065364 | -.062015 | .114838 |
| 12 | -.020361 | .031752 | -.005614 | .065613 | -.056201 | .128338 |
| 13 | -.028179 | .058252 | -.002092 | .066468 | -.054777 | .136438 |
| 14 | -.033658 | .081286 | -.001147 | .069095 | -.055734 | .145577 |
| 15 | -.036525 | .099628 | .009207 | .069127 | -.057643 | .153788 |
| 16 | -.038880 | .125491 | .016633 | .065891 | -.051387 | .154495 |
| 17 | -.042156 | .143327 | .023379 | .061711 | -.038068 | .152809 |
| 18 | -.044741 | .154351 | .023952 | .050161 | -.024263 | .144759 |
| 19 | -.051623 | .162347 | .020200 | .041874 | -.016356 | .135479 |
| 20 | -.056352 | .165148 | .017974 | .034027 | -.012221 | .137363 |
| 21 | -.059473 | .167816 | .017574 | .024423 | -.006305 | .133356 |
| 22 | -.063915 | .170787 | .017368 | .013838 | -.003569 | .121893 |
| 23 | -.060139 | .170855 | .018061 | -.002315 | .001321 | .111013 |
| 24 | -.051185 | .168906 | .022078 | -.020722 | .009066 | .101389 |
| 25 | -.039422 | .164233 | .020673 | -.028479 | .004947 | .094707 |
| 26 | -.029008 | .154807 | .017656 | -.026264 | -.007347 | .084094 |
| 27 | -.020619 | .143659 | .013324 | -.025462 | -.018455 | .076519 |
| 28 | -.016852 | .131237 | .008209 | -.025666 | -.020861 | .066374 |
| 29 | -.010575 | .116683 | .004658 | -.027314 | -.018481 | .053326 |
| 30 | -.006340 | .097187 | -.001012 | -.028317 | -.016467 | .031645 |
| 31 | -.007661 | .072558 | -.004105 | -.033053 | -.011723 | .005716 |
| 32 | -.008014 | .050982 | -.005699 | -.038746 | -.008320 | -.023481 |
| 33 | -.010410 | .032308 | -.005924 | -.039816 | -.002001 | -.049209 |
| 34 | -.014386 | .016209 | -.008182 | -.034448 | -.001156 | -.067627 |
| 35 | -.020752 | .005270 | -.013104 | -.028383 | .009930 | -.071542 |
| 36 | -.027495 | -.001325 | -.017050 | -.024991 | .015271 | -.072142 |
| 37 | -.027657 | -.008723 | -.014536 | -.027743 | .031924 | -.074597 |
| 38 | -.021015 | -.016696 | -.009052 | -.025253 | .039312 | -.073982 |
| 39 | -.013198 | -.027874 | -.003482 | -.020029 | .041678 | -.065440 |
| 40 | -.008211 | -.033609 | -.002406 | -.021868 | .044991 | -.056795 |
| 41 | -.001854 | -.038912 | -.001221 | -.024793 | .046343 | -.049043 |
| 42 | .005538 | -.041718 | -.008936 | -.019986 | .040343 | -.034498 |
| 43 | .009862 | -.046114 | -.017411 | -.013943 | .039789 | -.015024 |
| 44 | .008150 | -.045818 | -.027671 | -.012322 | .040640 | -.009830 |
| 45 | .004103 | -.052138 | -.030070 | -.005961 | .036019 | .028186 |
| 46 | .006933 | -.056327 | -.031548 | -.007173 | .023479 | .038720 |
| 47 | .014682 | -.051778 | -.029762 | .021619 | .014738 | .045591 |
| 48 | .014310 | -.044912 | -.029316 | .031811 | .008648 | .047989 |
| 49 | .007558 | -.036579 | -.028053 | .034982 | .006918 | .051132 |
| 50 | -.004495 | -.028580 | -.027927 | .030853 | .011079 | .052744 |
| 51 | -.011820 | -.026646 | -.021972 | .026394 | .016598 | .042552 |
| 52 | -.010530 | -.027082 | -.011593 | .019651 | .020554 | .036271 |
| 53 | -.008952 | -.029500 | .004640 | .010188 | .027047 | .033308 |
| 54 | -.009187 | -.027149 | .010816 | .001418 | .040398 | .031227 |
| 55 | -.012254 | -.019216 | .006468 | -.00851 | .055658 | .025363 |
| 56 | -.015291 | -.008487 | .012008 | -.016906 | .065172 | .017835 |
| 57 | -.017135 | .001230 | .022246 | -.021126 | .064029 | .008542 |
| 58 | -.020730 | .007947 | .027051 | -.022518 | .058339 | -.002981 |
| 59 | -.020830 | .014940 | .029929 | -.016765 | .047864 | -.0 0339 |
| 60 | -.015464 | .014577 | .034922 | -.010388 | .030220 | -.015786 |

RUN NO 87A 91H 6-14-63 1401-1502(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.19245 10E 00 | 0.19249 10E 00 | 0.48516 10E-01 | 0.17506 10E 00 | 0.44124 10E-01 | 0.44133 10E-01 |
| 1 | -.027078 | .002925 | -.031948 | -.056599 | .055911 | -.005658 |
| 2 | -.047844 | .006761 | -.044444 | -.095796 | .083581 | -.009650 |
| 3 | -.065431 | .005116 | -.042589 | -.124768 | .104847 | -.013147 |
| 4 | -.077444 | .000749 | -.042000 | -.144870 | .121882 | -.019462 |
| 5 | -.083984 | -.009263 | -.041657 | -.154610 | .137303 | -.025691 |
| 6 | -.089289 | -.021304 | -.038205 | -.156041 | .145256 | -.029125 |
| 7 | -.098433 | -.032262 | -.031825 | -.157775 | .151716 | -.031274 |
| 8 | -.104732 | -.039001 | -.029592 | -.157613 | .153033 | -.026781 |
| 9 | -.106493 | -.037768 | -.033321 | -.157665 | .149347 | -.022004 |
| 10 | -.107443 | -.033028 | -.035625 | -.162678 | .146133 | -.013721 |
| 11 | -.104740 | -.034061 | -.031981 | -.161737 | .140927 | -.004742 |
| 12 | -.103823 | -.042050 | -.021648 | -.154539 | .134465 | -.000040 |
| 13 | -.106874 | -.049900 | -.013654 | -.144735 | .125593 | .003857 |
| 14 | -.101794 | -.045736 | -.009979 | -.134158 | .118343 | .013953 |
| 15 | -.093438 | -.031772 | -.017760 | -.125794 | .111018 | .030879 |
| 16 | -.084664 | -.016648 | -.025958 | -.112923 | .094561 | .040427 |
| 17 | -.074855 | -.001125 | -.036592 | -.092905 | .074212 | .046309 |
| 18 | -.063500 | .009722 | -.043906 | -.068489 | .053951 | .047958 |
| 19 | -.052521 | .014083 | -.043196 | -.048791 | .038771 | .041691 |
| 20 | -.040835 | .013650 | -.041132 | -.028476 | .024843 | .033846 |
| 21 | -.027340 | .012471 | -.034438 | -.002460 | .011010 | .030630 |
| 22 | -.010171 | .017241 | -.016292 | .023014 | -.003227 | .033446 |
| 23 | .004000 | .023344 | -.022349 | .046925 | -.012765 | .026513 |
| 24 | .012914 | .026108 | -.019228 | .067081 | -.024734 | .015185 |
| 25 | .019118 | .025652 | -.009526 | .077391 | -.037888 | .008608 |
| 26 | .025598 | .021805 | .003317 | .087862 | -.046550 | .000808 |
| 27 | .030326 | .016564 | .017382 | .097850 | -.054018 | -.003802 |
| 28 | .031799 | .012843 | .025677 | .103587 | -.057045 | -.008710 |
| 29 | .037214 | .005060 | .033760 | .110478 | -.062379 | -.015692 |
| 30 | .042631 | -.002043 | .043913 | .115038 | -.067158 | -.020413 |
| 31 | .046352 | -.008824 | .049637 | .111939 | -.068697 | -.022401 |
| 32 | .048340 | -.014132 | .050317 | .109239 | -.065046 | -.023771 |
| 33 | .052023 | -.016889 | .046196 | .098827 | -.062281 | -.023682 |
| 34 | .055062 | -.017456 | .041084 | .083073 | -.065117 | -.026348 |
| 35 | .052015 | -.012241 | .031514 | .062873 | -.069564 | -.023997 |
| 36 | .043270 | -.003287 | .019050 | .030894 | -.063508 | -.018536 |
| 37 | .031934 | .008049 | .005403 | -.001827 | -.045518 | -.012330 |
| 38 | .022671 | .013858 | -.001364 | -.019415 | -.034755 | -.011568 |
| 39 | .012346 | .012586 | -.001221 | -.023368 | -.034135 | -.014551 |
| 40 | .005432 | .005735 | .003545 | -.020862 | -.038736 | -.015983 |
| 41 | .000863 | .002050 | .003399 | -.020057 | -.040017 | -.014953 |
| 42 | -.005824 | .001857 | -.002597 | -.024411 | -.036410 | -.014464 |
| 43 | -.011335 | .003320 | -.009318 | -.025603 | -.029368 | -.016626 |
| 44 | -.013436 | .000672 | -.012368 | -.026649 | -.029291 | -.022165 |
| 45 | -.012859 | -.002704 | -.016998 | -.030397 | -.026802 | -.023048 |
| 46 | -.009049 | -.003659 | -.018375 | -.036892 | -.023435 | -.015809 |
| 47 | -.009254 | -.006466 | -.018261 | -.040803 | -.021428 | -.008400 |
| 48 | -.008139 | -.012139 | -.014772 | -.042672 | -.016315 | -.005362 |
| 49 | -.004034 | -.017420 | -.010705 | -.042340 | -.011350 | -.005003 |
| 50 | -.000257 | -.017078 | -.010830 | -.035752 | -.005228 | -.001615 |
| 51 | .004091 | -.014274 | -.015362 | -.027142 | .001310 | .004622 |
| 52 | .010265 | -.010540 | -.020517 | -.017271 | .009238 | .008400 |
| 53 | .013268 | -.001353 | -.028647 | -.009035 | .014206 | .009839 |
| 54 | .011284 | .001044 | -.029446 | -.005522 | .018657 | .015207 |
| 55 | .012011 | -.000299 | -.022680 | .000316 | .025412 | .017447 |
| 56 | .008311 | .000624 | -.020218 | .005068 | .027555 | .016686 |
| 57 | .005978 | .001033 | -.020441 | .012167 | .024365 | .016081 |
| 58 | .007702 | .003976 | -.020338 | .014838 | .025682 | .017631 |
| 59 | .007641 | .007302 | -.017891 | .017069 | .024742 | .019078 |
| 60 | .005723 | .015542 | -.024604 | .024124 | .020571 | .022250 |

RUN NO 87A 91M 6-14-63 1401-1502(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.21160 10E 00 | 0.17503 10E 00 | 0.17510 10E 00 | 0.11124 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .879243 | .853455 | .842678 | .802394 |
| 2 | .724093 | .667646 | .635770 | .586687 |
| 3 | .598075 | .518991 | .470085 | .424346 |
| 4 | .492327 | .400825 | .336041 | .315574 |
| 5 | .394354 | .305480 | .229602 | .220057 |
| 6 | .303367 | .218970 | .138997 | .133712 |
| 7 | .219606 | .137859 | .069 | .067875 |
| 8 | .150360 | .070044 | .009806 | .017663 |
| 9 | .092336 | .015047 | -.045260 | -.028992 |
| 10 | .030581 | -.030691 | -.093980 | -.073411 |
| 11 | -.025091 | -.073319 | -.136177 | -.107624 |
| 12 | -.076107 | -.114753 | -.170038 | -.126341 |
| 13 | -.121669 | -.167663 | -.203734 | -.139962 |
| 14 | -.163606 | -.215248 | -.240577 | -.156269 |
| 15 | -.204815 | -.250596 | -.268233 | -.176964 |
| 16 | -.246177 | -.270890 | -.284951 | -.189822 |
| 17 | -.282381 | -.285448 | -.291914 | -.201794 |
| 18 | -.309175 | -.301828 | -.279526 | -.203638 |
| 19 | -.323333 | -.321514 | -.262609 | -.199416 |
| 20 | -.331799 | -.333860 | -.255573 | -.204711 |
| 21 | -.341681 | -.337095 | -.250680 | -.202216 |
| 22 | -.350170 | -.335160 | -.235021 | -.191117 |
| 23 | -.350599 | -.335306 | -.215321 | -.172721 |
| 24 | -.342712 | -.330090 | -.200605 | -.163655 |
| 25 | -.326940 | -.309493 | -.186437 | -.160896 |
| 26 | -.306384 | -.282404 | -.167491 | -.151938 |
| 27 | -.279281 | -.247176 | -.149792 | -.148811 |
| 28 | -.248529 | -.207970 | -.124473 | -.139584 |
| 29 | -.217772 | -.169348 | -.090530 | -.125504 |
| 30 | -.173620 | -.133618 | -.049296 | -.098387 |
| 31 | -.119773 | -.099126 | -.003386 | -.066642 |
| 32 | -.067948 | -.070705 | .043713 | -.036490 |
| 33 | -.027983 | -.043085 | .085750 | -.009446 |
| 34 | .005314 | -.014051 | .111310 | .012970 |
| 35 | .026435 | .014697 | .115156 | .023543 |
| 36 | .043240 | .040122 | .107483 | .036777 |
| 37 | .048957 | .059709 | .100149 | .052522 |
| 38 | .044785 | .070976 | .098099 | .060117 |
| 39 | .041033 | .076659 | .100525 | .057866 |
| 40 | .039069 | .089258 | .098951 | .056267 |
| 41 | .042950 | .099604 | .091016 | .056789 |
| 42 | .051746 | .110359 | .076713 | .061332 |
| 43 | .062943 | .129131 | .059347 | .047043 |
| 44 | .069925 | .156080 | .038025 | .020671 |
| 45 | .076763 | .170516 | .018817 | -.000034 |
| 46 | .084503 | .168178 | -.001066 | -.011445 |
| 47 | .088954 | .162561 | -.017924 | -.015098 |
| 48 | .090216 | .152137 | -.027688 | -.025415 |
| 49 | .084711 | .139927 | -.036846 | -.038597 |
| 50 | .074831 | .122456 | -.046344 | -.039334 |
| 51 | .065478 | .103448 | -.042536 | -.032492 |
| 52 | .059022 | .088101 | -.036924 | -.024612 |
| 53 | .044363 | .077883 | -.040786 | -.023392 |
| 54 | .029162 | .076988 | -.050002 | -.014069 |
| 55 | .013490 | .078742 | -.053928 | .000088 |
| 56 | -.002819 | .076062 | -.056137 | .008486 |
| 57 | -.013875 | .066109 | -.053710 | .018740 |
| 58 | -.017172 | .049543 | -.045012 | .026798 |
| 59 | -.021436 | .033739 | -.038298 | .028921 |
| 60 | -.031336 | .010811 | -.030372 | .026198 |

RUN NG 87A 91M 6-14-63 1401-1502(EST)
61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-03 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .053132 | -.011905 | -.149938 | .003426 | -.005422 | -.010223 |
| 1 | .498055 | -.131148 | -.504825 | .053606 | -.015453 | -.167502 |
| 2 | .608713 | -.186301 | -.583660 | -.097845 | .044127 | -.298713 |
| 3 | .638696 | -.195473 | -.739602 | -.462597 | .101047 | -.447365 |
| 4 | .442675 | -.102925 | -.461700 | -.612424 | .101312 | -.368944 |
| 5 | .234697 | -.040838 | -.270127 | -.453070 | .107388 | -.217568 |
| 6 | .084934 | -.028946 | -.240685 | -.294957 | .106178 | -.191243 |
| 7-8 | .096442 | -.019896 | -.376937 | -.166487 | .049440 | -.131956 |
| 9-11 | -.009697 | -.008566 | -.375582 | -.126068 | .039190 | -.080720 |
| 12-15 | -.013763 | -.001385 | -.182964 | -.039659 | .021290 | -.055283 |
| 16-20 | -.016380 | -.001528 | -.134636 | -.025008 | .014340 | -.036459 |
| 21-27 | .000590 | -.000995 | -.094710 | -.011507 | .005998 | -.019509 |
| 28-36 | .000046 | .000027 | -.053403 | -.009603 | .004243 | -.011893 |
| 37-47 | -.002556 | -.000672 | -.031561 | -.004474 | .002183 | -.005861 |
| 48-60 | .000298 | -.000266 | -.013283 | -.000897 | .001225 | -.004395 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-01 | 10E-02 | 10E-03 |
| 1 | -.541661 | -.094765 | -.494737 | -.043662 | .116165 | .155818 |
| 2 | -.757675 | -.141823 | -.750131 | -.088024 | .224543 | .276745 |
| 3 | -.833896 | -.227523 | -.802053 | -.129538 | .264638 | -.040470 |
| 4 | -.413816 | -.210039 | -.162534 | -.079559 | .157183 | -.558216 |
| 5 | -.068896 | -.074443 | .070032 | -.013649 | .064502 | -.592686 |
| 6 | -.043646 | .102623 | -.345680 | -.006600 | .032191 | -.286996 |
| 7-8 | -.035303 | .106040 | -.395909 | -.014774 | .023523 | .046015 |
| 9-11 | -.043665 | .028913 | -.068438 | -.010075 | .016825 | .044586 |
| 12-15 | -.016376 | .027566 | -.126427 | -.004039 | .004640 | .009434 |
| 16-20 | -.013737 | -.009350 | -.036556 | -.000969 | .006852 | .000778 |
| 21-27 | .004551 | .002753 | -.053166 | -.000678 | .004051 | -.001210 |
| 28-36 | -.001906 | -.002432 | -.018807 | -.000395 | .002401 | -.003449 |
| 37-47 | -.001865 | -.001667 | -.000603 | -.000234 | .001152 | -.003516 |
| 48-60 | -.001387 | -.001235 | .000301 | -.000165 | .000963 | .000753 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .030858 | .006399 | .010207 | .011531 |
| 1 | .297386 | .159790 | .125104 | .102033 |
| 2 | .412059 | .297464 | .218980 | .138943 |
| 3 | .446283 | .352976 | .314132 | .168000 |
| 4 | .255049 | .209611 | .240782 | .122925 |
| 5 | .109717 | .107121 | .129819 | .077922 |
| 6 | .086571 | .083499 | .103276 | .069382 |
| 7-8 | .079803 | .073482 | .076940 | .049763 |
| 9-11 | .045995 | .044881 | .054049 | .034086 |
| 12-15 | .024707 | .027754 | .031906 | .020172 |
| 16-20 | .016208 | .017234 | .019604 | .014417 |
| 21-27 | .011629 | .011792 | .011382 | .009569 |
| 28-36 | .006595 | .006434 | .007205 | .006075 |
| 37-47 | .004304 | .004456 | .004629 | .003749 |
| 48-60 | .002761 | .002837 | .002767 | .003152 |

RUN NO 87A 91M 6-14-63 1401-1502(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.18023 10E 00 | 0.17223 10E 00 | 0.57727 10E-01 | 0.12345 10E 00 | 0.41378 10E-01 | 0.39540 10E-01 |
| 0 | .137998 | -.577372 | -.281909 | -.076435 | .082333 | -.362255 |
| 1 | .034136 | -.313595 | -.242565 | .071026 | -.001267 | -.025217 |
| 2 | -.051753 | -.059306 | -.200613 | .037113 | .065594 | .074907 |
| 3 | -.051324 | -.008242 | -.158749 | -.034575 | .077795 | .003271 |
| 4 | -.057121 | -.018103 | -.097456 | -.020900 | .099544 | .004048 |
| 5 | -.078903 | .032625 | -.047107 | .015677 | .086023 | .031551 |
| 6 | -.078961 | .097725 | .014932 | .031695 | .031210 | .022961 |
| 7 | -.043473 | .102639 | .058834 | .031061 | -.044200 | .044831 |
| 8 | -.031181 | .132946 | .074145 | .040253 | -.043453 | .008066 |
| 9 | -.050352 | .127417 | .061467 | .000269 | .002813 | .053928 |
| 10 | -.055593 | .094240 | .037572 | -.011173 | .016564 | .079730 |
| 11 | .002169 | .009439 | .055801 | -.026405 | .001701 | .044177 |
| 12 | .023894 | .035327 | .055421 | .041934 | -.060723 | .015615 |
| 13 | .009275 | .036925 | .074787 | .045018 | -.029357 | -.008610 |
| 14 | .056529 | .003885 | .069680 | -.015017 | .000362 | -.009424 |
| 15 | .133044 | -.035434 | .105269 | -.049841 | -.051147 | -.034647 |
| 16 | .113085 | .026664 | .120961 | .002584 | -.085822 | -.073019 |
| 17 | .037662 | .090464 | .117045 | .009086 | -.081933 | -.069381 |
| 18 | .000309 | .118901 | .150067 | .065193 | -.066473 | -.096058 |
| 19 | .025781 | .093551 | .142500 | -.012135 | -.040712 | -.097037 |
| 20 | .071653 | .041930 | .113654 | -.051211 | -.063898 | -.068890 |
| 21 | .067987 | .043143 | .054713 | -.061958 | -.051423 | -.021146 |
| 22 | .089430 | -.038879 | .060293 | -.083222 | -.046778 | .005655 |
| 23 | .116062 | -.058724 | .039397 | -.138516 | -.030336 | .035749 |
| 24 | .041333 | -.026616 | -.019395 | -.049508 | -.014903 | .095635 |
| 25 | -.053247 | -.122402 | -.055019 | .051330 | -.021813 | .097540 |
| 26 | -.045942 | -.125128 | -.095898 | -.002997 | -.034615 | .068403 |
| 27 | -.014975 | -.062313 | -.095507 | -.043794 | .010708 | .094849 |
| 28 | -.007259 | -.055535 | -.093765 | .012611 | .019503 | .060327 |
| 29 | -.001138 | -.074827 | -.070812 | .043685 | -.033396 | -.014361 |
| 30 | .028354 | -.040705 | -.111316 | -.030060 | .020538 | .029149 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-03 |
| 0 | -.054133 | -.003123 | -.042675 | .022583 | .013033 | -.141970 |
| 1 | -.579136 | -.065775 | -.467200 | .184922 | .154969 | -.088318 |
| 2 | -.298232 | -.059511 | -.451698 | .040280 | .122114 | -.098862 |
| 3 | .264038 | -.107014 | -.286101 | -.062691 | .039214 | -.966288 |
| 4 | .459103 | -.112090 | -.198099 | .005043 | .004753 | -.813675 |
| 5 | .323654 | -.102152 | -.187663 | -.021821 | .002507 | .009737 |
| 6 | .131096 | -.049356 | -.073556 | .006132 | -.030305 | -.288482 |
| 7 | .157315 | -.032506 | -.003072 | .067929 | -.062379 | .648094 |
| 8 | .358059 | -.046578 | .011896 | .043276 | -.062942 | .789369 |
| 9-11 | .136529 | -.047677 | -.001487 | .072318 | -.022651 | -.749143 |
| 12-14 | .081733 | -.040970 | -.021045 | -.071433 | .038095 | .522870 |
| 15-16 | .153385 | -.026594 | -.006250 | -.133704 | .004295 | .901941 |
| 17-19 | .040331 | -.010005 | -.007391 | -.106279 | .034200 | -.582949 |

RUN NO 87A 91M 6-14-63 1401-1502(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|---------------------|-------------------|-------------------|-------------------|
| | 0.1E023 10E 00 | 0.17223 10E 00 | .0.57727 .10E-01 | 0.12345 10E 00 | 0.41378 10E-01 | 0.39540 10E-01 |
| 1 | -.130816 | -.034433 | -.061613 | -.165576 | .087987 | .008826 |
| 2 | -.115450 | .000775 | -.093846 | -.075582 | .022765 | .038923 |
| 3 | -.054502 | -.027697 | -.059777 | -.040597 | -.041433 | -.001719 |
| 4 | -.082126 | -.002758 | -.098510 | -.034081 | -.058481 | .022446 |
| 5 | -.066677 | -.021169 | -.095606 | -.056394 | -.020367 | .028537 |
| 6 | -.033143 | -.019433 | .060377 | .017732 | .005087 | .031787 |
| 7 | -.026620 | .007373 | .025581 | -.003395 | .017381 | .016393 |
| 8 | .003357 | .000650 | .000598 | -.061657 | .040250 | .004466 |
| 9 | .024133 | -.033276 | .041611 | -.016691 | .089431 | -.024249 |
| 10 | .060007 | -.011082 | .048993 | .035679 | .059676 | .005971 |
| 11 | .049340 | .042689 | -.008968 | .027085 | .044004 | .017267 |
| 12 | .066617 | -.008150 | .023074 | .064702 | -.023575 | -.031185 |
| 13 | .078397 | -.028036 | .044273 | .061736 | -.021075 | -.034746 |
| 14 | .012139 | -.039097 | .060168 | .006695 | .011862 | -.028408 |
| 15 | -.013414 | -.025111 | .034805 | -.006538 | -.008541 | -.045517 |
| 16 | .006910 | -.032046 | .044496 | -.015850 | -.015961 | -.066275 |
| 17 | -.007906 | -.047279 | .071380 | .044820 | -.067925 | -.069166 |
| 18 | .000532 | -.035517 | .072643 | .09542 | -.105307 | -.060852 |
| 19 | -.011159 | .000455 | .031317 | .016774 | -.085948 | -.048341 |
| 20 | -.023057 | -.005331 | .030573 | .029223 | -.088840 | -.027084 |
| 21 | -.017503 | .009635 | .023908 | .039509 | -.071072 | -.005947 |
| 22 | -.033867 | .033687 | .005956 | -.003948 | -.059112 | -.032226 |
| 23 | -.022610 | .021307 | .018688 | -.018122 | -.052938 | -.015046 |
| 24 | -.052464 | .031507 | .028747 | -.028231 | -.041826 | .015015 |
| 25 | -.123616 | .022121 | .012628 | -.079618 | -.005777 | .008395 |
| 26 | -.092475 | .017369 | .002140 | -.123544 | .002140 | .045993 |
| 27 | -.070688 | .006537 | .000424 | -.081646 | -.012900 | .063291 |
| 28 | .013217 | -.040582 | .028772 | .002618 | -.000426 | .016894 |
| 29 | .019205 | -.038362 | .058091 | -.005798 | .021777 | -.010712 |
| 30 | -.021263 | -.002084 | .041315 | -.095412 | .084428 | -.012034 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 1 | -.000154 | -.22616 | .040778 | .089250 | -.137122 | -.511333 |
| 2 | -.121240 | -.082616 | -.106619 | -.092323 | .611040 | .321204 |
| 3 | -.516771 | .016196 | -.189994 | -.226167 | .109505 | .629256 |
| 4 | -.617598 | -.097076 | -.149586 | -.147652 | -.724549 | .139744 |
| 5 | -.430782 | -.126779 | -.106856 | -.116558 | -.459790 | .011319 |
| 6 | -.187910 | .005762 | -.081629 | -.044109 | -.116503 | .138403 |
| 7 | -.099307 | .016309 | -.029985 | -.020946 | .142082 | .063354 |
| 8 | -.188732 | -.039442 | .014319 | -.172527 | .604983 | -.088762 |
| 9-11 | -.175259 | -.031473 | -.002175 | -.165677 | .446447 | .002834 |
| 12-14 | -.181737 | -.019842 | -.032166 | -.173208 | .550161 | .199113 |
| 15-21 | -.119000 | -.033967 | -.010530 | -.174748 | .175646 | -.045698 |
| 22-30 | .017891 | -.070973 | .014869 | -.007410 | .123477 | -.146445 |

RUN NO 87A 91M 6-14-63 1402-1502(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| N | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.25145 10E 00 | 0.12919 10E 00 | 0.11797 10E 00 | 0.13253 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .562121 | .312002 | .226163 | .604340 |
| 2 | .177451 | -.027999 | -.080346 | .404131 |
| 3 | .086358 | .002352 | .063678 | .315289 |
| 4 | .029162 | .092772 | .049439 | .219738 |
| 5 | -.067998 | .096438 | -.087539 | .086614 |
| 6 | -.158753 | -.043731 | -.137403 | -.018667 |
| 7 | -.201351 | -.168757 | -.017883 | -.071408 |
| 8 | -.231677 | -.145159 | -.110827 | -.167464 |
| 9 | -.175810 | -.158938 | -.181625 | -.229671 |
| 10 | -.082506 | -.115077 | -.196503 | -.265944 |
| 11 | -.016763 | -.202422 | -.011387 | -.261424 |
| 12 | -.069783 | -.311776 | -.016400 | -.221784 |
| 13 | -.064807 | -.161127 | -.025684 | -.175460 |
| 14 | .033631 | .004304 | -.019582 | -.140026 |
| 15 | .050846 | .091800 | .020878 | -.140081 |
| 16 | -.031728 | -.011077 | -.020142 | -.098356 |
| 17 | -.138730 | -.083812 | -.059148 | -.076301 |
| 18 | -.246845 | .023059 | -.004832 | -.073250 |
| 19 | -.236231 | .126797 | -.006642 | -.028785 |
| 20 | -.151511 | .139442 | .010226 | -.039720 |
| 21 | -.088581 | .020073 | -.026770 | -.043379 |
| 22 | -.002140 | -.010097 | .015174 | -.082662 |
| 23 | .012022 | .151378 | .002900 | -.097950 |
| 24 | .025678 | .163884 | -.082964 | -.115667 |
| 25 | .092743 | -.027827 | .091250 | -.088179 |
| 26 | .131806 | -.099742 | .115524 | -.030827 |
| 27 | .118473 | -.136876 | -.004166 | -.025168 |
| 28 | .109041 | -.082797 | .018318 | .018677 |
| 29 | .109088 | -.066328 | .143938 | .071647 |
| 30 | .163467 | .005701 | .017360 | .089534 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 |
| 0 | .021591 | .005092 | .032549 | .032967 |
| 1 | .232452 | .058837 | .435871 | .232013 |
| 2 | .259576 | .106593 | .662854 | .231826 |
| 3 | .265199 | .142769 | .883528 | .218516 |
| 4 | .302397 | .088494 | .859691 | .140103 |
| 5 | .277954 | .035939 | .645269 | .063428 |
| 6 | .135631 | .027343 | .401803 | .037193 |
| 7 | .090295 | .043223 | .326018 | .033776 |
| 8 | .111572 | .059907 | .421942 | .036433 |
| 9-11 | .092488 | .051081 | .513452 | .032843 |
| 12-14 | .094366 | .088534 | .424133 | .027730 |
| 15-21 | .061846 | .043585 | .641296 | .027165 |
| 22-30 | .027912 | .036904 | .356859 | .022225 |

RUN NO 87A 46M 6-14-63 1401-1502(EST)
 RUN NO 87A 91M 6-14-63 1401-1502(EST)

61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .218766 | .046398 | .414098 | .267979 |
| 1 | .266410 | .454596 | .491974 | .196026 |
| 2 | .271381 | .423996 | .442103 | .096176 |
| 3 | .190186 | .400923 | .359306 | .041977 |
| 4 | .078310 | .340556 | .299845 | .080279 |
| 5 | .068944 | .226439 | .349999 | .098636 |
| 6 | .082180 | .209929 | .394924 | .072113 |
| 7-8 | .106230 | .245336 | .226286 | .063204 |
| 9-11 | .129985 | .051351 | .099697 | .060630 |
| 12-15 | .124639 | .213486 | .082763 | .124643 |
| 16-20 | .140594 | .093236 | .176301 | .043589 |
| 21-27 | .093453 | .079595 | .057269 | .116931 |
| 28-36 | .106036 | .101985 | .098552 | .139491 |
| 37-47 | .097160 | .117130 | .101468 | .071373 |
| 48-60 | .081355 | .134468 | .100556 | .102458 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .837585 | .381822 | .850300 | .218261 |
| 1 | .680434 | .443057 | .713002 | .502647 |
| 2 | .527267 | .699051 | .652125 | .508714 |
| 3 | .466568 | .735712 | .631490 | .407283 |
| 4 | .627702 | .598372 | .542865 | .321340 |
| 5 | .644772 | .639934 | .555826 | .301240 |
| 6 | .341943 | .681079 | .555171 | .141355 |
| 7 | .439320 | .450509 | .379133 | .208596 |
| 8 | .631043 | .465264 | .231737 | .332415 |
| 9-11 | .445760 | .579598 | .605226 | .178195 |
| 12-14 | .370066 | .400379 | .408370 | .155989 |
| 15-21 | .247589 | .382733 | .376097 | .207934 |
| 22-30 | .260565 | .216522 | .344393 | .157173 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)

GROSS STATISTICS

CLEAR SIGMA A 13.3 DEG
STABLE/UNSTABLE WIND SPEED 4.12 M/SEC
WIND DIRECTION 216 DEG
SOLAR RAD. 1.36 LY/MIN SIGMA E 11.6 DEG

WITH NO WITH 301 POINT WITH 61 POINT 301 PT RUN MEAN
RUNNING MEAN RUNNING MEAN RUNNING MEAN 10 PT BLOCK AVG

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.18156E 01 | 0.13952E 01 | 0.99116E 00 | 0.94096E 00 |
| V | 0.73342E 00 | 0.71740E 00 | 0.56400E 00 | 0.37002E-00 |
| W | 0.44009E-00 | 0.42522E-00 | 0.39476E-00 | 0.14447E-00 |
| T | 0.12421E 01 | 0.20322E-00 | 0.98641E-01 | 0.16029E-00 |
| E | 0.14945E 01 | 0.12689E 01 | 0.97496E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.32705 | 0.28669 | 0.24164 | 0.23544 |
| V | 0.20786 | 0.20558 | 0.18228 | 0.14764 |
| W | 0.16102 | 0.15828 | 0.15250 | 0.09225 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.52531E-01 | -0.50191E-01 | -0.25151E-01 | -0.73142E-01 |
| U,W | -0.36286E-00 | -0.32245E-00 | -0.23088E-00 | -0.21958E-00 |
| U,T | -0.99113E 00 | -0.42436E-00 | -0.24852E-00 | -0.32475E-00 |
| V,W | -0.69695E-02 | -0.10973E-01 | -0.19974E-02 | -0.57209E-02 |
| V,T | 0.77773E-01 | 0.67103E-01 | 0.16206E-01 | 0.59086E-01 |
| W,T | 0.15418E-00 | 0.12230E-00 | 0.84783E-01 | 0.78670E-01 |
| WE | 0.15410E-00 | 0.15536E-00 | 0.11370E-00 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.04552 | -0.08015 | -0.03364 | -0.12396 |
| U,W | -0.40594 | -0.41864 | -0.36910 | -0.59556 |
| U,T | -0.65999 | -0.79695 | -0.79481 | -0.83621 |
| V,W | -0.01227 | -0.01987 | -0.00422 | -0.02474 |
| V,T | 0.08148 | 0.17574 | 0.06871 | 0.24262 |
| W,T | 0.20853 | 0.41603 | 0.42965 | 0.51699 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.74775 10E 00 | 0.62567 10E 00 | 0.31268 10E 00 | 0.47202 10E 00 | 0.23589 10E 00 | 0.19738 10E 00 |
| 0 | -.033618 | -.369122 | -.794839 | -.004006 | .068630 | .429844 |
| 1 | -.038434 | -.333175 | -.715078 | -.010248 | .056682 | .368554 |
| 2 | -.035409 | -.265681 | -.586453 | -.010831 | .040394 | .274511 |
| 3 | -.029391 | -.196544 | -.468185 | .002846 | .031054 | .194427 |
| 4 | -.026131 | -.138487 | -.369238 | .007052 | .027860 | .127851 |
| 5 | -.026186 | -.090802 | -.285517 | -.001122 | .030249 | .081428 |
| 6 | -.023491 | -.054142 | -.208186 | -.011598 | .027635 | .050817 |
| 7 | -.019167 | -.025470 | -.140568 | -.016561 | .019160 | .026726 |
| 8 | -.016511 | -.000619 | -.081961 | -.001769 | .012539 | .004178 |
| 9 | -.019276 | .022293 | -.031098 | .009276 | .012455 | -.018944 |
| 10 | -.017175 | .040338 | .015922 | .023542 | .014110 | -.035170 |
| 11 | -.012542 | .055457 | .063394 | .029473 | .011674 | -.047835 |
| 12 | -.012151 | .060017 | .100429 | .031281 | .008520 | -.033686 |
| 13 | -.010836 | .061377 | .126826 | .024968 | .000823 | -.058002 |
| 14 | -.014080 | .060237 | .143934 | .026449 | .000273 | -.062511 |
| 15 | -.013769 | .051531 | .154712 | .024937 | .005960 | -.066443 |
| 16 | -.017003 | .041636 | .163809 | .017909 | .010296 | -.069280 |
| 17 | -.015794 | .035356 | .174585 | .005424 | .007523 | -.070628 |
| 18 | -.007302 | .049397 | .190390 | -.004276 | .000988 | -.075408 |
| 19 | .000945 | .069715 | .211484 | -.007068 | -.000521 | -.084232 |
| 20 | .009096 | .082898 | .226252 | -.003474 | -.002398 | -.091148 |
| 21 | .014600 | .087452 | .229532 | -.005247 | -.003455 | -.092398 |
| 22 | .017344 | .086965 | .228489 | -.002553 | -.005823 | -.089168 |
| 23 | .019769 | .092982 | .228087 | .003531 | -.006102 | -.086873 |
| 24 | .020047 | .103610 | .229642 | .006572 | -.005925 | -.092406 |
| 25 | .020697 | .113203 | .227848 | .000137 | -.004931 | -.109934 |
| 26 | .021541 | .115834 | .221276 | -.021771 | -.004796 | -.117083 |
| 27 | .024087 | .114577 | .213965 | -.040363 | -.010823 | -.112135 |
| 28 | .028137 | .104490 | .198528 | -.035905 | -.016684 | -.097105 |
| 29 | .032460 | .086851 | .171036 | -.030163 | -.021413 | -.081527 |
| 30 | .031.10 | .062761 | .144924 | -.020667 | -.019633 | -.060400 |
| 31 | .024405 | .038844 | .115519 | -.004623 | -.014750 | -.033604 |
| 32 | .019410 | .022812 | .090285 | .007780 | -.009151 | -.01212 |
| 33 | .014970 | .010511 | .068133 | .019401 | -.007334 | -.006345 |
| 34 | .010905 | .001161 | .052898 | .020851 | -.012700 | -.005222 |
| 35 | .007451 | -.003323 | .039464 | .017296 | -.018638 | .002710 |
| 36 | .006664 | -.011698 | .017949 | .016802 | -.023601 | .011563 |
| 37 | .004380 | -.022938 | -.005198 | .008203 | -.028255 | .025612 |
| 38 | .007437 | -.032701 | -.027545 | -.004458 | -.033433 | .034374 |
| 39 | .016100 | -.043006 | -.049467 | -.015114 | -.041134 | .038810 |
| 40 | .021029 | -.047075 | -.070800 | -.029446 | -.042616 | .048401 |
| 41 | .021302 | -.046851 | -.085794 | -.032163 | -.036661 | .054381 |
| 42 | .022331 | -.039177 | -.089975 | -.028738 | -.033120 | .051094 |
| 43 | .025405 | -.028578 | -.087835 | -.023919 | -.032198 | .045583 |
| 44 | .029828 | -.024607 | -.081140 | -.024930 | -.031636 | .042714 |
| 45 | .029487 | -.019042 | -.076123 | -.028804 | -.030444 | .040829 |
| 46 | .022533 | -.021064 | -.076168 | -.021422 | -.028630 | .039344 |
| 47 | .018894 | -.028077 | -.079094 | -.013371 | -.028040 | .039010 |
| 48 | .020527 | -.030908 | -.079548 | -.009076 | -.027678 | .033882 |
| 49 | .016839 | -.031452 | -.073117 | -.016766 | -.023993 | .023194 |
| 50 | .011847 | -.026159 | -.061399 | -.020084 | -.019877 | .007937 |
| 51 | .008379 | -.015571 | -.047604 | -.019593 | -.021029 | .000633 |
| 52 | .011062 | -.007053 | -.039049 | -.014773 | -.021449 | .004747 |
| 53 | .018981 | -.000372 | -.035401 | -.002077 | -.019754 | .009268 |
| 54 | .018783 | -.005803 | -.032719 | .002608 | -.015147 | .012095 |
| 55 | .016528 | -.012820 | -.032942 | .005026 | -.013315 | .014695 |
| 56 | .009988 | -.012524 | -.030071 | .014275 | -.004198 | .016270 |
| 57 | -.002328 | -.004393 | -.022687 | .024848 | .010194 | .009764 |
| 58 | -.011292 | .009775 | -.010496 | .024443 | .016200 | -.006135 |
| 59 | -.015219 | .015596 | -.000411 | .019367 | .018516 | -.018534 |
| 60 | -.017447 | .012348 | .008848 | .015731 | .019751 | -.026965 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.74775 10E 00 | 0.62567 10E 00 | 0.31268 10E 00 | 0.47202 10E 00 | 0.23589 10E 00 | 0.19738 10E 00 |
| 1 | .000110 | -.043624 | -.062634 | .000333 | .024984 | -.025238 |
| 2 | .008339 | -.062922 | -.089150 | -.002100 | .042431 | -.024536 |
| 3 | .014511 | -.064810 | -.105212 | -.004209 | .052795 | -.026286 |
| 4 | .017060 | -.065077 | -.118279 | -.000403 | .055018 | -.016490 |
| 5 | .024830 | -.067763 | -.127225 | .007895 | .053673 | -.011692 |
| 6 | .038238 | -.070382 | -.132249 | .022743 | .056872 | -.005690 |
| 7 | .056665 | -.066218 | -.135907 | .031455 | .064555 | .001656 |
| 8 | .071607 | -.056138 | -.138812 | .029545 | .072160 | .007829 |
| 9 | .083603 | -.047393 | -.138249 | .027033 | .078862 | .011265 |
| 10 | .082896 | -.045450 | -.136107 | .027554 | .076363 | .014081 |
| 11 | .070976 | -.047977 | -.136364 | .025516 | .066622 | .010379 |
| 12 | .064384 | -.044530 | -.128076 | .019643 | .063583 | .008286 |
| 13 | .054894 | -.032749 | -.118061 | .014679 | .057670 | .015449 |
| 14 | .051212 | -.025046 | -.109211 | .013995 | .051430 | .018828 |
| 15 | .048797 | -.018012 | -.098625 | .012970 | .048999 | .023390 |
| 16 | .043795 | -.011295 | -.084907 | .016917 | .042522 | .021188 |
| 17 | .047525 | -.000203 | -.074794 | .017339 | .038713 | .027434 |
| 18 | .048399 | .009932 | -.066328 | .008006 | .036207 | .034707 |
| 19 | .036153 | .011386 | -.059469 | -.002872 | .027068 | .029678 |
| 20 | .023382 | .012984 | -.052006 | -.011443 | .017479 | .031228 |
| 21 | .016099 | .023227 | -.044171 | -.023570 | .009497 | .036421 |
| 22 | .002736 | .034835 | -.038995 | -.029276 | .001084 | .045729 |
| 23 | -.009075 | .035380 | -.033510 | -.034510 | -.006076 | .041260 |
| 24 | -.014092 | .030914 | -.023392 | -.034934 | -.008694 | .030659 |
| 25 | -.022813 | .023084 | -.010132 | -.035504 | -.008000 | .021493 |
| 26 | -.027859 | .018083 | .003242 | -.035030 | -.009498 | .020182 |
| 27 | -.027122 | .019266 | .014771 | -.040021 | -.010261 | .018108 |
| 28 | -.031504 | .024917 | .025051 | -.036730 | -.012142 | .017490 |
| 29 | -.040592 | .031245 | .036018 | -.026698 | -.017018 | .019524 |
| 30 | -.045673 | .033460 | .046642 | -.018375 | -.025562 | .019344 |
| 31 | -.050930 | .038784 | .053894 | -.014211 | -.033741 | .014049 |
| 32 | -.054467 | .041302 | .056720 | -.010372 | -.037549 | .009422 |
| 33 | -.055125 | .032006 | .057077 | -.001377 | -.041434 | -.000281 |
| 34 | -.052298 | .025851 | .057060 | .007048 | -.045106 | -.003741 |
| 35 | -.049749 | .022066 | .054777 | .015773 | -.042987 | -.002655 |
| 36 | -.047796 | .011994 | .049767 | .021463 | -.035390 | -.007775 |
| 37 | -.042500 | .002539 | .047456 | .018280 | -.025309 | -.013721 |
| 38 | -.039207 | -.003948 | .046181 | .021483 | -.017150 | -.020501 |
| 39 | -.035603 | -.004922 | .043948 | .027474 | -.014976 | -.018920 |
| 40 | -.025645 | .000397 | .044006 | .030633 | -.011801 | -.015190 |
| 41 | -.019541 | .005208 | .038702 | .025176 | -.012296 | -.010040 |
| 42 | -.011665 | -.000920 | .031657 | .025693 | -.006473 | -.011316 |
| 43 | -.007896 | -.012217 | .023646 | .019566 | -.002691 | -.017069 |
| 44 | -.006155 | -.016054 | .014446 | .009346 | -.001312 | -.017290 |
| 45 | -.004117 | -.013400 | .005466 | .001143 | -.003539 | -.012004 |
| 46 | -.002170 | -.011057 | -.000532 | .004340 | -.003444 | -.005945 |
| 47 | .004918 | -.011569 | -.002919 | .019292 | .001790 | -.005233 |
| 48 | .013096 | -.013719 | -.005127 | .031008 | .005999 | -.004244 |
| 49 | .019684 | -.018197 | -.009186 | .032408 | .005152 | -.005939 |
| 50 | .024876 | -.020160 | -.006114 | .029924 | .012398 | -.014802 |
| 51 | .034605 | -.024541 | -.005336 | .034242 | .023430 | -.024632 |
| 52 | .047956 | -.022238 | -.010853 | .032637 | .033827 | -.020255 |
| 53 | .057713 | -.016351 | -.015155 | .025134 | .038586 | -.011790 |
| 54 | .057114 | -.007811 | -.017007 | .019629 | .041334 | -.001108 |
| 55 | .051882 | -.003112 | -.017097 | .015708 | .037663 | .004659 |
| 56 | .048276 | -.008284 | -.022851 | .013867 | .029871 | -.002825 |
| 57 | .052031 | -.020681 | -.027111 | .005945 | .027097 | -.012802 |
| 58 | .048447 | -.024192 | -.029995 | -.005596 | .025040 | -.019508 |
| 59 | .037903 | -.014936 | -.030048 | -.013467 | .015167 | -.013990 |
| 60 | .028005 | -.014806 | -.028330 | -.023404 | .008443 | -.008420 |

RUN NO 68A 15M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.99116 10E 00 | 0.56412 10E 00 | 0.39495 10E 00 | 0.98643 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .839100 | .758177 | .654688 | .863137 |
| 2 | .638951 | .503935 | .327696 | .683704 |
| 3 | .490032 | .334235 | .133133 | .541461 |
| 4 | .374835 | .213548 | .040177 | .427507 |
| 5 | .273287 | .118145 | -.011859 | .340564 |
| 6 | .189869 | .048885 | -.054075 | .263494 |
| 7 | .125017 | -.001991 | -.078517 | .189665 |
| 8 | .069278 | -.040745 | -.082545 | .122036 |
| 9 | .014904 | -.066789 | -.080874 | .062006 |
| 10 | -.038036 | -.074004 | -.078529 | .008507 |
| 11 | -.089061 | -.080741 | -.066009 | -.043602 |
| 12 | -.122545 | -.098446 | -.047244 | -.090720 |
| 13 | -.141329 | -.111229 | -.045175 | -.128283 |
| 14 | -.157101 | -.135207 | -.049985 | -.156807 |
| 15 | -.172892 | -.160681 | -.068176 | -.177383 |
| 16 | -.185059 | -.176363 | -.092426 | -.194552 |
| 17 | -.198623 | -.180915 | -.104342 | -.209918 |
| 18 | -.215028 | -.180930 | -.108133 | -.227474 |
| 19 | -.233583 | -.168744 | -.118982 | -.246921 |
| 20 | -.247651 | -.154345 | -.113003 | -.260778 |
| 21 | -.246942 | -.147111 | -.112141 | -.260321 |
| 22 | -.245158 | -.148434 | -.086844 | -.256301 |
| 23 | -.248219 | -.141765 | -.065696 | -.254147 |
| 24 | -.255892 | -.124473 | -.067982 | -.253908 |
| 25 | -.259528 | -.119068 | -.098872 | -.257710 |
| 26 | -.254952 | -.128316 | -.125695 | -.257350 |
| 27 | -.243527 | -.133605 | -.117785 | -.251524 |
| 28 | -.222801 | -.135186 | -.114272 | -.239167 |
| 29 | -.183927 | -.137359 | -.096943 | -.210630 |
| 30 | -.155020 | -.126033 | -.078703 | -.172411 |
| 31 | -.120483 | -.101911 | -.047715 | -.132083 |
| 32 | -.094338 | -.076671 | -.019714 | -.099621 |
| 33 | -.072220 | -.049785 | -.004817 | -.077279 |
| 34 | -.046569 | -.028246 | .014910 | -.065155 |
| 35 | -.025834 | -.004155 | .033400 | -.055521 |
| 36 | -.006990 | .021797 | .041470 | -.036040 |
| 37 | .012090 | .031308 | .056440 | -.011375 |
| 38 | .036295 | .035181 | .066078 | .010564 |
| 39 | .057120 | .028552 | .074374 | .030907 |
| 40 | .076018 | .030435 | .072929 | .056228 |
| 41 | .089396 | .037025 | .052239 | .078250 |
| 42 | .089914 | .033475 | .040715 | .087131 |
| 43 | .083866 | .025304 | .042220 | .088279 |
| 44 | .082965 | .031402 | .057575 | .087482 |
| 45 | .086644 | .040349 | .046522 | .085911 |
| 46 | .086685 | .041265 | .019178 | .086675 |
| 47 | .091441 | .050832 | .014107 | .086630 |
| 48 | .093460 | .064441 | .014301 | .082748 |
| 49 | .087371 | .078530 | .023316 | .070278 |
| 50 | .071104 | .079848 | .011026 | .055704 |
| 51 | .053773 | .070551 | -.006051 | .045291 |
| 52 | .042958 | .058669 | -.016278 | .039678 |
| 53 | .042997 | .048188 | -.017971 | .038236 |
| 54 | .045443 | .022998 | -.009414 | .039358 |
| 55 | .053792 | .004152 | -.001410 | .035825 |
| 56 | .052864 | .013201 | .015471 | .033165 |
| 57 | .044811 | .028070 | .016288 | .023073 |
| 58 | .030991 | .041469 | .011001 | .006659 |
| 59 | .020147 | .042764 | .017648 | -.007240 |
| 60 | .011607 | .042298 | .015968 | -.016643 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-01 |
| 0 | -.015266 | -.021718 | -.033879 | .015619 | .063134 | .007275 |
| 1 | -.130468 | -.237994 | -.328335 | .254447 | .475089 | .075211 |
| 2 | -.098709 | -.357886 | -.457284 | .107263 | .301111 | .116879 |
| 3 | -.040541 | -.399583 | -.486338 | -.117846 | .114878 | .136009 |
| 4 | .003132 | -.236047 | -.286189 | -.261507 | .106767 | .083660 |
| 5 | -.013505 | -.160399 | -.174248 | -.365552 | .089506 | .055709 |
| 6 | -.013106 | -.201521 | -.155383 | -.118282 | .058208 | .062207 |
| 7-8 | -.019087 | -.155762 | -.106437 | .080157 | .061225 | .048121 |
| 9-11 | -.000262 | -.053716 | -.051689 | .164501 | .026495 | .027055 |
| 12-15 | -.004275 | -.043883 | -.036584 | -.086774 | .029820 | .017596 |
| 16-20 | .001765 | -.017228 | -.017508 | -.083335 | .016517 | .010711 |
| 21-27 | -.001293 | -.008796 | -.012030 | .029379 | .027641 | .004626 |
| 28-36 | .003034 | -.004459 | -.005177 | .036546 | .003104 | .002829 |
| 37-47 | .001555 | -.001399 | -.002938 | .017653 | .006269 | .001794 |
| 48-60 | .000928 | -.001361 | -.001728 | -.003710 | .002120 | .000793 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .064911 | -.003886 | -.123623 | -.045282 | .356541 | .293779 |
| 2 | .178198 | -.072698 | -.164257 | .079519 | .576916 | .192492 |
| 3 | .212348 | -.149195 | -.161840 | .558525 | .654369 | -.024527 |
| 4 | .072328 | -.126929 | -.081303 | .531345 | .338663 | -.154571 |
| 5 | -.006336 | -.073648 | -.041937 | -.005719 | .143070 | -.098057 |
| 6 | -.009526 | -.052012 | -.038385 | -.240067 | .106847 | -.048860 |
| 7-8 | -.017190 | -.027807 | -.019917 | -.024921 | .030060 | -.051857 |
| 9-11 | -.028418 | -.029615 | -.011136 | -.090402 | .034358 | -.076833 |
| 12-15 | .001347 | -.013301 | -.008926 | -.068880 | .042097 | -.045420 |
| 16-20 | .005834 | -.006494 | -.004889 | -.007185 | .031228 | -.021067 |
| 21-27 | -.003451 | -.009773 | -.003891 | .036074 | -.005067 | -.021337 |
| 28-36 | -.001632 | -.001521 | -.002521 | -.007801 | .001251 | -.003112 |
| 37-47 | -.001599 | -.000402 | -.001195 | .008766 | .001618 | .001062 |
| 48-60 | .000211 | -.000221 | -.000372 | -.004952 | .000808 | .001040 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-01 | 10E-01 | 10E-01 |
| 0 | .009452 | .024468 | .009805 | .016228 |
| 1 | .106442 | .378973 | .142195 | .135320 |
| 2 | .156807 | .598727 | .252327 | .174036 |
| 3 | .170311 | .700421 | .328278 | .179215 |
| 4 | .102742 | .515803 | .237204 | .105403 |
| 5 | .064574 | .395575 | .189047 | .063420 |
| 6 | .060431 | .358694 | .228059 | .053952 |
| 7-8 | .044619 | .263492 | .207922 | .037208 |
| 9-11 | .024795 | .227680 | .189279 | .022307 |
| 12-15 | .017691 | .121052 | .109607 | .015789 |
| 16-20 | .010604 | .087019 | .091770 | .009524 |
| 21-27 | .007059 | .058000 | .064154 | .006221 |
| 28-36 | .004641 | .041453 | .039212 | .003309 |
| 37-47 | .002637 | .025949 | .026372 | .002325 |
| 48-60 | .001723 | .018005 | .021145 | .001326 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.58994 10E 00 | 0.36871 10E 00 | 0.38839 10E 00 | 0.23117 10E 00 | 0.24351 10E 00 | 0.15219 10E 00 |
| 0 | -.123981 | -.595545 | -.836147 | -.024747 | .242641 | .516913 |
| 1 | -.086355 | -.264880 | -.471592 | -.010117 | .189871 | .249545 |
| 2 | -.046186 | -.134546 | -.273552 | -.014168 | .150520 | .139024 |
| 3 | .009863 | -.046379 | -.139278 | -.040951 | .087364 | .080846 |
| 4 | .028197 | -.029071 | -.084845 | -.041718 | .025474 | .046801 |
| 5 | .058396 | .037582 | .005695 | -.045267 | -.023843 | -.026014 |
| 6 | .035973 | .085258 | .108060 | .036454 | -.024706 | -.096609 |
| 7 | .015361 | .137378 | .196003 | .021313 | -.046437 | -.140633 |
| 8 | .019088 | .111768 | .246833 | -.009056 | -.075161 | -.131240 |
| 9 | .053690 | .092795 | .205955 | -.003844 | -.134655 | -.129825 |
| 10 | .043286 | .135256 | .226520 | .022570 | -.151569 | -.153812 |
| 11 | .015302 | .112235 | .198930 | .017708 | -.138369 | -.123021 |
| 12 | .076726 | .128861 | .229236 | .019405 | -.151090 | -.100608 |
| 13 | .014014 | .075841 | .191204 | .064315 | -.082813 | -.060258 |
| 14 | .030139 | .073630 | .175380 | -.001684 | -.065798 | -.055280 |
| 15 | .013410 | .049844 | .080418 | -.014504 | -.034702 | -.023841 |
| 16 | -.065864 | .027011 | .029121 | .041297 | .035990 | .004007 |
| 17 | -.100230 | .010518 | .025317 | .091172 | .094318 | .017434 |
| 18 | -.090934 | -.058550 | -.015881 | .088137 | .120417 | .078813 |
| 19 | -.077457 | -.064702 | -.069850 | .024584 | .105320 | .088910 |
| 20 | -.057984 | -.064237 | -.117497 | -.018077 | .086999 | .084523 |
| 21 | -.079762 | -.029955 | -.106246 | .009426 | .095362 | .033471 |
| 22 | -.028290 | -.052769 | -.110508 | .000264 | .028063 | .050014 |
| 23 | .027617 | -.075068 | -.135484 | .005563 | -.003260 | .051234 |
| 24 | .044598 | -.056432 | -.137534 | -.057453 | -.029213 | .021498 |
| 25 | .063023 | -.025918 | -.039506 | -.080576 | -.056387 | -.017233 |
| 26 | .083549 | .047990 | .049383 | -.099053 | -.081806 | -.088021 |
| 27 | .078054 | .060743 | .084581 | -.097099 | -.097372 | -.097917 |
| 28 | .100875 | .048049 | .098599 | -.060709 | -.105363 | -.077114 |
| 29 | .095583 | .066772 | .109596 | -.082502 | -.095553 | -.073561 |
| 30 | .090242 | .071688 | .122466 | -.119189 | -.077530 | -.074866 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-01 | 10E-01 |
| 0 | -.002605 | -.007340 | -.015600 | .020961 | .004781 | .003749 |
| 1 | .022262 | -.125183 | -.253213 | -.235528 | .052540 | .045929 |
| 2 | -.061416 | -.237394 | -.474948 | -.376950 | .116139 | .090350 |
| 3 | -.176872 | -.318449 | -.591192 | -.131899 | .184710 | .136097 |
| 4 | -.122590 | -.220809 | -.367724 | .023406 | .100669 | .098526 |
| 5 | -.025434 | -.139727 | -.207374 | -.059571 | .004814 | .050347 |
| 6 | -.087237 | -.124586 | -.162291 | .081590 | .020481 | .037177 |
| 7 | -.107398 | -.101654 | -.118956 | .138699 | .037096 | .025661 |
| 8 | -.062137 | -.076550 | -.093806 | .063201 | .027577 | .018919 |
| 9-11 | -.031685 | -.063895 | -.093341 | .155550 | .012375 | .019907 |
| 12-14 | .010134 | -.083954 | -.099380 | -.120548 | -.005529 | .026692 |
| 15-21 | -.003628 | -.050553 | -.058391 | -.029353 | .004007 | .018758 |
| 22-30 | -.012356 | -.059001 | -.061642 | -.031356 | .006673 | .019127 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)
 301 PCINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.58994 10E 00 | 0.36871 10E 00 | 0.38839 10E 00 | 0.23117 10E 00 | 0.24351 10E 00 | 0.15219 10E 00 |
| 1 | .045542 | -.047004 | -.164341 | .036776 | .067210 | .069112 |
| 2 | .010317 | .041833 | -.186979 | -.024059 | .047677 | .131764 |
| 3 | -.071122 | .031849 | -.179467 | -.043068 | .015589 | .125760 |
| 4 | -.086660 | -.005930 | -.181133 | .020628 | .002004 | .108999 |
| 5 | -.027276 | -.005012 | -.187687 | .006140 | .020305 | .100128 |
| 6 | -.039870 | -.007775 | -.180231 | -.039684 | .004222 | .084110 |
| 7 | -.068251 | .012470 | -.136517 | -.102815 | -.024227 | .089316 |
| 8 | -.100842 | .002046 | -.091507 | -.032742 | -.048333 | .040442 |
| 9 | -.114442 | .015055 | -.051101 | -.026279 | -.069516 | .049951 |
| 10 | -.030780 | .014565 | -.008290 | -.011162 | -.042533 | -.003225 |
| 11 | -.013958 | .055749 | -.018512 | -.032102 | -.044666 | .040709 |
| 12 | .013511 | -.001708 | -.001627 | -.078848 | -.044730 | .007639 |
| 13 | .023788 | -.007038 | .044986 | -.018705 | -.029339 | -.023008 |
| 14 | .032739 | .014343 | .088445 | -.02147 | -.019730 | -.036525 |
| 15 | .047137 | -.040050 | .090219 | .005425 | -.033148 | -.064956 |
| 16 | .027474 | -.032508 | .072484 | .003292 | -.027342 | -.061159 |
| 17 | .056050 | -.008926 | .069079 | -.013108 | .018326 | -.058186 |
| 18 | .018299 | .007357 | .077679 | -.002938 | .006377 | -.047734 |
| 19 | -.017690 | .013548 | .081736 | .028332 | .004808 | -.040823 |
| 20 | .000255 | .004100 | .039926 | -.009076 | .006017 | .010079 |
| 21 | -.039730 | -.037694 | .009901 | -.042187 | .006217 | -.012071 |
| 22 | -.011864 | -.041964 | -.008981 | .052625 | .031804 | -.008835 |
| 23 | .068226 | .019748 | -.010682 | .115086 | .096498 | .033745 |
| 24 | .038663 | .024261 | -.034722 | .080229 | .072056 | .046084 |
| 25 | -.019038 | .043376 | -.063296 | -.013857 | .011962 | .054568 |
| 26 | -.015052 | -.011569 | -.067580 | -.011376 | .016900 | .025133 |
| 27 | -.005353 | -.010265 | -.051301 | -.036172 | .005451 | .017178 |
| 28 | .029297 | .021390 | -.010370 | .020078 | .018228 | .000228 |
| 29 | .071350 | .013730 | -.002621 | .061641 | .045392 | -.010889 |
| 30 | -.002121 | -.006975 | .037269 | .017569 | -.036480 | -.039091 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 1 | -.121712 | .131145 | -.136502 | -.517694 | -.441844 | .347464 |
| 2 | -.157060 | .193425 | -.239417 | -.403144 | -.257386 | .562580 |
| 3 | -.151545 | .124843 | -.300066 | -.101762 | .198939 | .694901 |
| 4 | -.035736 | -.090976 | -.183118 | .071419 | .392093 | .394121 |
| 5 | .068719 | -.077160 | -.095286 | .092315 | .314970 | .210612 |
| 6 | .053661 | .115931 | -.073223 | .091286 | .229141 | .238337 |
| 7 | -.005551 | .282555 | -.048190 | .023864 | .091721 | .187486 |
| 8 | -.010297 | .161362 | -.031010 | .0 1690 | .069165 | .092873 |
| 9-11 | .026631 | -.027791 | -.036338 | -.135524 | .119031 | .081648 |
| 12-14 | .086509 | -.132552 | -.035436 | .107391 | .199478 | .022633 |
| 15-21 | .008201 | -.308485 | -.016485 | .155956 | .050557 | -.021217 |
| 22-30 | -.001929 | -.071726 | -.006186 | -.008104 | .028188 | .000536 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.94092 10E 00 | 0.36989 10E 00 | 0.14448 10E 00 | 0.16031 10E 00 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .457111 | .365817 | .204049 | .665630 |
| 2 | .210608 | .158920 | .015796 | .441994 |
| 3 | .073889 | .111916 | .017014 | .273127 |
| 4 | .038865 | .053235 | .052796 | .158876 |
| 5 | -.021447 | .023387 | -.011933 | .021636 |
| 6 | -.109087 | -.046314 | -.115400 | -.127924 |
| 7 | -.206075 | -.149029 | -.173997 | -.253120 |
| 8 | -.228003 | -.262487 | -.134818 | -.344254 |
| 9 | -.158350 | -.178859 | -.141937 | -.342858 |
| 10 | -.164918 | -.211931 | -.170355 | -.366538 |
| 11 | -.156437 | -.244736 | -.060170 | -.321537 |
| 12 | -.239342 | -.245399 | -.076850 | -.322886 |
| 13 | -.195533 | -.212766 | -.025268 | -.278630 |
| 14 | -.172216 | -.142700 | -.062074 | -.236270 |
| 15 | -.063551 | -.016550 | .021572 | -.115836 |
| 16 | -.043848 | .007436 | .029390 | -.028049 |
| 17 | -.048612 | .016854 | .022690 | .000075 |
| 18 | -.021704 | .084308 | .031865 | .062407 |
| 19 | .043432 | .050622 | .029964 | .133374 |
| 20 | .098147 | .077311 | .027640 | .187512 |
| 21 | .092901 | .100498 | -.011973 | .161453 |
| 22 | .092373 | .093593 | .057745 | .151501 |
| 23 | .143357 | -.018449 | -.026433 | .151588 |
| 24 | .169768 | -.032014 | -.060683 | .126527 |
| 25 | .075036 | .073083 | .038318 | .011301 |
| 26 | -.003882 | .028669 | .014392 | -.093983 |
| 27 | -.058719 | .039228 | -.062154 | -.141535 |
| 28 | -.097669 | -.076043 | -.093005 | -.149401 |
| 29 | -.093600 | -.060591 | .031180 | -.164307 |
| 30 | -.110062 | -.046552 | .063410 | -.166061 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-01 |
| 0 | .002697 | .009142 | .003964 | .013425 |
| 1 | .059599 | .218854 | .049918 | .166042 |
| 2 | .108843 | .405062 | .084848 | .284409 |
| 3 | .131850 | .523015 | .128031 | .357919 |
| 4 | .085905 | .327684 | .115252 | .213324 |
| 5 | .060067 | .131554 | .072869 | .094086 |
| 6 | .052376 | .115866 | .048813 | .067044 |
| 7 | .043015 | .141027 | .041255 | .045606 |
| 8 | .034243 | .130646 | .040192 | .035715 |
| 9-11 | .031352 | .133529 | .055581 | .038833 |
| 12-14 | .036571 | .145253 | .068471 | .034610 |
| 15-21 | .021319 | .112759 | .056930 | .022210 |
| 22-30 | .023553 | .110072 | .059782 | .021553 |

RUN NO 88A 46M 6-18-63 0936-1052(EST)

GROSS STATISTICS

| | | |
|--------------------------|------------------------|-----------------|
| CLEAR STABLE/UNSTABLE | WIND SPEED 5.15 M/SEC | SIGMA A 7.4 DEG |
| | WIND DIRECTION 210 DEG | SIGMA E 5.8 DEG |
| | SOLAR RAD. 1.36 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.94606E 00 | 0.32815E-00 | 0.23134E-00 | 0.21394E-00 |
| V | 0.35994E-00 | 0.29848E-00 | 0.23703E-00 | 0.17201E-00 |
| W | 0.20708E-00 | 0.19017E-00 | 0.15294E-00 | 0.10075E-00 |
| T | 0.10000E 01 | 0.53967E-01 | 0.4121E-01 | 0.42365E-01 |
| E | 0.75654E 00 | 0.40841E-00 | 0.31066E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.18887 | 0.11123 | 0.09339 | 0.08981 |
| V | 0.11649 | 0.10608 | 0.09454 | 0.08053 |
| W | 0.08836 | 0.08468 | 0.07594 | 0.06163 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.26997E-01 | 0.46993E-01 | 0.29087E-01 | 0.38758E-01 |
| U,W | -0.13367E-00 | -0.72028E-01 | -0.37751E-01 | -0.50452E-01 |
| U,T | -0.75500E 00 | -0.44206E-01 | -0.21088E-01 | -0.36169E-01 |
| V,W | -0.54152E-01 | -0.61124E-01 | -0.48687E-01 | -0.29694E-01 |
| V,T | 0.29016E-01 | 0.53435E-01 | 0.35975E-01 | 0.33878E-01 |
| W,T | 0.24574E-01 | -0.29264E-01 | -0.21519E-01 | -0.16244E-01 |
| WE | 0.11597E-00 | 0.87030E-01 | 0.42736E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.04626 | 0.15016 | 0.12421 | 0.20204 |
| U,W | -0.30201 | -0.28833 | -0.20070 | -0.34364 |
| U,T | -0.77621 | -0.33218 | -0.28230 | -0.37992 |
| V,W | -0.19835 | -0.25656 | -0.25571 | -0.22556 |
| V,T | 0.04836 | 0.42103 | 0.47578 | 0.39686 |
| W,T | 0.05400 | -0.28887 | -0.35430 | -0.24864 |

RUN NO 88A 46M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.23422 10E 00 | 0.18813 10E 00 | 0.74719 10E-01 | 0.19041 10E 00 | 0.75621 10E-01 | 0.60741 10E-01 |
| 0 | .124567 | -.200732 | -.282022 | -.255471 | .475652 | -.354301 |
| 1 | .120970 | -.177966 | -.238229 | -.210515 | .398896 | -.280218 |
| 2 | .116455 | -.135816 | -.182196 | -.136777 | .283596 | -.175644 |
| 3 | .105633 | -.091135 | -.147663 | -.074000 | .195296 | -.103817 |
| 4 | .087914 | -.058617 | -.123470 | -.023046 | .127626 | -.058041 |
| 5 | .075602 | -.040493 | -.095414 | .007256 | .068638 | -.029388 |
| 6 | .065201 | -.024414 | -.068267 | .018706 | .025749 | -.016587 |
| 7 | .054076 | -.011371 | -.045218 | .019845 | -.001229 | -.009749 |
| 8 | .033449 | -.004244 | -.031656 | .021436 | -.016922 | -.002292 |
| 9 | .015236 | -.000090 | -.018102 | .027944 | -.035939 | .010473 |
| 10 | .004283 | .008688 | -.001987 | .039282 | -.058261 | .026629 |
| 11 | -.011950 | .017558 | .007481 | .044008 | -.075364 | .040101 |
| 12 | -.027041 | .015735 | .017869 | .043023 | -.080834 | .048860 |
| 13 | -.037954 | .009731 | .023697 | .037069 | -.077063 | .054706 |
| 14 | -.046321 | .006868 | .031585 | .029422 | -.064932 | .051574 |
| 15 | -.051329 | .011968 | .041712 | .013578 | -.057123 | .040001 |
| 16 | -.053662 | .015113 | .053475 | -.001372 | -.054715 | .031937 |
| 17 | -.053149 | .020307 | .061224 | -.008162 | -.053789 | .027530 |
| 18 | -.053717 | .032065 | .066243 | -.006886 | -.052594 | .024783 |
| 19 | -.054109 | .032646 | .074854 | -.004213 | -.056765 | .027717 |
| 20 | -.051127 | .030535 | .087758 | .000918 | -.063268 | .038286 |
| 21 | -.042752 | .025174 | .097927 | .004848 | -.067596 | .045664 |
| 22 | -.042808 | .017023 | .104434 | .022687 | -.073029 | .052928 |
| 23 | -.051765 | .019879 | .102600 | .032533 | -.070758 | .049209 |
| 24 | -.053047 | .031905 | .097823 | .035265 | -.069437 | .047099 |
| 25 | -.038829 | .036857 | .097870 | .033518 | -.069616 | .049874 |
| 26 | -.024982 | .034734 | .094920 | .032193 | -.070042 | .060651 |
| 27 | -.016921 | .038609 | .082313 | .028065 | -.070573 | .064463 |
| 28 | -.011452 | .038663 | .064028 | .025055 | -.069931 | .060446 |
| 29 | -.009887 | .033769 | .050908 | .023048 | -.061662 | .047523 |
| 30 | -.014152 | .027104 | .038648 | .018202 | -.044075 | .031155 |
| 31 | -.019317 | .025717 | .022549 | .008064 | -.023960 | .010386 |
| 32 | -.017911 | .022161 | .006596 | -.002133 | -.012781 | -.000286 |
| 33 | -.012396 | .014805 | -.002217 | -.004485 | -.009831 | -.002927 |
| 34 | -.009741 | .000817 | -.008552 | .003156 | -.010340 | -.001647 |
| 35 | -.011300 | .007030 | -.021203 | .009351 | -.008883 | -.000415 |
| 36 | -.008053 | .005480 | -.026965 | .008027 | -.006750 | -.003154 |
| 37 | -.002863 | .001415 | -.022175 | -.000830 | -.000604 | -.010420 |
| 38 | -.000361 | -.004746 | -.017493 | -.006314 | .004713 | -.016749 |
| 39 | .007000 | -.006630 | -.012636 | -.012063 | .011859 | -.016071 |
| 40 | .020268 | -.008213 | -.006821 | -.023683 | .017796 | -.025776 |
| 41 | .025439 | -.010580 | -.00439 | -.033777 | .017188 | -.032116 |
| 42 | .019116 | -.010699 | -.013478 | -.035952 | .013489 | -.031710 |
| 43 | .009659 | -.001109 | -.028695 | -.024737 | .007685 | -.024293 |
| 44 | -.001087 | .013435 | -.037965 | -.008445 | .001437 | -.017531 |
| 45 | -.007044 | .020926 | -.037699 | -.000525 | -.001816 | -.017056 |
| 46 | -.008378 | .020414 | -.032013 | -.002611 | -.003162 | -.022216 |
| 47 | -.011009 | .021596 | -.021677 | .001526 | -.003577 | -.022852 |
| 48 | -.010898 | .020319 | -.015640 | .008541 | -.002375 | -.019740 |
| 49 | -.009067 | .009126 | -.011932 | .021411 | -.008315 | -.010210 |
| 50 | -.006504 | -.000841 | -.003766 | .025070 | -.012277 | -.002776 |
| 51 | -.002884 | -.003199 | .002880 | .026733 | -.008875 | .003167 |
| 52 | .002113 | -.006012 | .008506 | .028214 | -.000805 | .007897 |
| 53 | .010408 | -.007929 | .012674 | .024843 | .003273 | .008825 |
| 54 | .016976 | -.005586 | .015499 | .021954 | .004384 | .009305 |
| 55 | .019171 | -.011148 | .016644 | .017180 | .012687 | .006380 |
| 56 | .023637 | .016186 | .017553 | .003420 | .030113 | -.000361 |
| 57 | .031466 | .010556 | .018382 | -.004909 | .038954 | .006216 |
| 58 | .033493 | .003534 | .022594 | .002405 | .042374 | .020705 |
| 59 | .037058 | -.004429 | .024880 | .011982 | .037902 | .025982 |
| 60 | .037678 | -.008733 | .025451 | .020366 | .026816 | .027456 |

RUN NO 88A 46M 6-18-63 .0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.23422 10E 00 | 0.18813 10E 00 | 0.74719 10E-01 | 0.19041 10E 00 | 0.75621 10E-01 | 0.60741 10E-01 |
| 1 | -.002025 | -.014497 | -.014539 | -.009423 | .044069 | -.031765 |
| 2 | .001376 | -.026958 | -.013177 | -.020993 | .068649 | -.044093 |
| 3 | .002888 | -.037709 | -.014049 | -.020603 | .079947 | -.050869 |
| 4 | .008696 | -.045059 | -.014654 | -.019171 | .086935 | -.054246 |
| 5 | .014817 | -.051258 | -.007101 | -.020053 | .090538 | -.049635 |
| 6 | .013156 | -.053053 | .000342 | -.024350 | .092727 | -.047873 |
| 7 | .010857 | -.047391 | .001821 | -.040372 | .096130 | -.042476 |
| 8 | .007718 | -.048017 | .003729 | -.054230 | .098530 | -.035732 |
| 9 | .016793 | -.053807 | .014085 | -.057534 | .096650 | -.034112 |
| 10 | .022928 | -.065020 | .026201 | -.066147 | .099722 | -.030334 |
| 11 | .017521 | -.069651 | .033995 | -.073935 | .099039 | -.031393 |
| 12 | .009955 | -.065330 | .037313 | -.072883 | .096871 | -.031450 |
| 13 | .004238 | -.059729 | .037232 | -.063449 | .096537 | -.032782 |
| 14 | -.001067 | -.055509 | .038046 | -.051510 | .096663 | -.036159 |
| 15 | -.007557 | -.052529 | .037686 | -.043619 | .093433 | -.038345 |
| 16 | -.006879 | -.048243 | .039638 | -.038903 | .087410 | -.040280 |
| 17 | -.002603 | -.048930 | .041231 | -.028248 | .075117 | -.042166 |
| 18 | .006634 | -.045609 | .040757 | -.018657 | .067326 | -.047801 |
| 19 | .015805 | -.031917 | .032369 | -.006137 | .057881 | -.049465 |
| 20 | .024520 | -.017155 | .029625 | -.008454 | .044899 | -.051606 |
| 21 | .027259 | -.013068 | .028812 | .023346 | .026811 | -.054010 |
| 22 | .021927 | -.009454 | .027439 | .038144 | .005788 | -.051976 |
| 23 | .020760 | -.000498 | .022967 | .047163 | -.014192 | -.045290 |
| 24 | .019675 | .004949 | .020301 | .052614 | -.025817 | -.040979 |
| 25 | .018683 | .011836 | .010990 | .053694 | -.030053 | -.037692 |
| 26 | .012369 | .019586 | -.000774 | .054891 | -.034717 | -.024212 |
| 27 | -.000900 | .031455 | -.008885 | .043668 | -.036468 | -.002882 |
| 28 | -.005964 | .045315 | -.015525 | .029558 | -.037495 | .021216 |
| 29 | -.003180 | .053911 | -.025924 | .021480 | -.040472 | .037321 |
| 30 | .008296 | .056481 | -.029249 | .013808 | -.042908 | .047156 |
| 31 | .015915 | .059966 | -.034526 | -.001933 | -.037607 | .054738 |
| 32 | .019514 | .067834 | -.038850 | -.012697 | -.030327 | .056522 |
| 33 | .017811 | .069676 | -.035720 | -.013512 | -.023480 | .059850 |
| 34 | .018905 | .060743 | -.025639 | -.006749 | -.017745 | .057873 |
| 35 | .023397 | .056532 | -.018466 | -.008397 | -.010709 | .056763 |
| 36 | .026650 | .048997 | -.012059 | -.015502 | -.005664 | .056161 |
| 37 | .033795 | .037087 | -.005228 | -.016308 | -.001599 | .047207 |
| 38 | .040465 | .033839 | -.002761 | -.003789 | .001774 | .037412 |
| 39 | .037746 | .033753 | -.000520 | .006681 | .002026 | .033778 |
| 40 | .028096 | .036639 | -.006041 | .007092 | .002196 | .029625 |
| 41 | .019757 | .041140 | -.011884 | .001616 | .003061 | .025982 |
| 42 | .015247 | .042564 | -.011194 | .003462 | .006507 | .026387 |
| 43 | .007232 | .036521 | -.013050 | .005442 | .005515 | .024126 |
| 44 | -.001006 | .026063 | -.014218 | -.003705 | -.001161 | .020657 |
| 45 | -.009460 | .015642 | -.015533 | -.004507 | -.003896 | .021406 |
| 46 | -.020071 | .002581 | -.008500 | -.009656 | -.003597 | .021606 |
| 47 | -.025155 | -.015369 | .001901 | -.014618 | -.001668 | .018350 |
| 48 | -.025412 | -.028572 | .013155 | -.011543 | .001636 | .003119 |
| 49 | -.026318 | -.035310 | .018792 | -.004947 | .003170 | -.010353 |
| 50 | -.029919 | -.036476 | .018048 | -.002031 | .005404 | -.017125 |
| 51 | -.034044 | -.036815 | .013840 | .009376 | -.003722 | -.020467 |
| 52 | -.039108 | -.041093 | .016171 | .013167 | -.011041 | -.022548 |
| 53 | -.039524 | -.049354 | .019768 | .009795 | -.010778 | -.023064 |
| 54 | -.043063 | -.048783 | .020200 | .004572 | -.007428 | -.021689 |
| 55 | -.047150 | -.037396 | .015429 | .003022 | -.001044 | -.022549 |
| 56 | -.043977 | -.035143 | .014002 | .007705 | .003473 | -.023297 |
| 57 | -.039204 | -.036489 | .015384 | .010926 | .002559 | -.018046 |
| 58 | -.036201 | -.037379 | .016711 | .004240 | -.003245 | -.011638 |
| 59 | -.038185 | -.037157 | .020227 | -.000156 | -.011307 | -.006777 |
| 60 | -.039037 | -.032319 | .017819 | .003809 | -.017219 | -.005419 |

RUN NO 86A 46M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.23143 10E 00 | 0.23705 10E 00 | 0.15294 10E 00 | 0.24124 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .833440 | .816396 | .770076 | .818165 |
| 2 | .630693 | .592359 | .492045 | .610507 |
| 3 | .485722 | .426390 | .307118 | .459181 |
| 4 | .367178 | .302759 | .196656 | .347821 |
| 5 | .266028 | .200645 | .128440 | .256473 |
| 6 | .186476 | .114484 | .070537 | .185131 |
| 7 | .124524 | .049120 | .018566 | .132722 |
| 8 | .065899 | .004056 | -.018300 | .088298 |
| 9 | .010310 | -.033393 | -.050846 | .042452 |
| 10 | -.036533 | -.076071 | -.091899 | -.006353 |
| 11 | -.080472 | -.116621 | -.122577 | -.049135 |
| 12 | -.116797 | -.144121 | -.139261 | -.084460 |
| 13 | -.138437 | -.164374 | -.151972 | -.105571 |
| 14 | -.166536 | -.174307 | -.165584 | -.113513 |
| 15 | -.205998 | -.186447 | -.166383 | -.119085 |
| 16 | -.237626 | -.192164 | -.151537 | -.126453 |
| 17 | -.257645 | -.195132 | -.126910 | -.137274 |
| 18 | -.270326 | -.195665 | -.111371 | -.148200 |
| 19 | -.279341 | -.191062 | -.103571 | -.163226 |
| 20 | -.290709 | -.190931 | -.101169 | -.182798 |
| 21 | -.295671 | -.195169 | -.108954 | -.192626 |
| 22 | -.295134 | -.202109 | -.116749 | -.204161 |
| 23 | -.290738 | -.197955 | -.122061 | -.207549 |
| 24 | -.281669 | -.190496 | -.127734 | -.207058 |
| 25 | -.272976 | -.179962 | -.142102 | -.211729 |
| 26 | -.252137 | -.172629 | -.166920 | -.210835 |
| 27 | -.217496 | -.161774 | -.177606 | -.200014 |
| 28 | -.172005 | -.144056 | -.165056 | -.179739 |
| 29 | -.132156 | -.118551 | -.138912 | -.156969 |
| 30 | -.094595 | -.092328 | -.101616 | -.130328 |
| 31 | -.051791 | -.061527 | -.061021 | -.095970 |
| 32 | -.017282 | -.041257 | -.036448 | -.072716 |
| 33 | .009675 | -.034086 | -.025409 | -.061697 |
| 34 | .034593 | -.028163 | -.022149 | -.054156 |
| 35 | .057198 | -.019202 | -.007850 | -.045507 |
| 36 | .074339 | -.011053 | .013732 | -.038087 |
| 37 | .083663 | -.001104 | .042094 | -.024004 |
| 38 | .086290 | .009823 | .054099 | -.016120 |
| 39 | .086422 | .026964 | .048982 | -.010357 |
| 40 | .085311 | .040746 | .053022 | .000085 |
| 41 | .081738 | .037638 | .062302 | .001697 |
| 42 | .090127 | .033732 | .064159 | .003588 |
| 43 | .098522 | .027837 | .054778 | .010005 |
| 44 | .094377 | .022798 | .035736 | .012552 |
| 45 | .083516 | .021138 | .017465 | .015789 |
| 46 | .071407 | .023414 | .017115 | .015879 |
| 47 | .056314 | .023081 | .021828 | .013104 |
| 48 | .045630 | .023637 | .025693 | .011654 |
| 49 | .043278 | .021708 | .030096 | .003651 |
| 50 | .037857 | .022705 | .028154 | -.002431 |
| 51 | .030836 | .026113 | .016699 | -.002472 |
| 52 | .026694 | .038677 | .008661 | .004560 |
| 53 | .019087 | .051128 | .014927 | .007390 |
| 54 | .004951 | .056813 | .025919 | .006596 |
| 55 | -.001639 | .067594 | .038321 | .011092 |
| 56 | -.005489 | .081356 | .038693 | .020452 |
| 57 | -.007147 | .090589 | .024196 | .018197 |
| 58 | -.007164 | .096054 | .005409 | .012630 |
| 59 | -.001595 | .090391 | .003512 | .011416 |
| 60 | .004108 | .072660 | .003668 | .013243 |

RUN NC 88A 46M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .058072 | -.079063 | -.028901 | -.053355 | .032493 | -.022497 |
| 1 | .524971 | -.505629 | -.264485 | -.310007 | .306330 | -.157492 |
| 2 | .688379 | -.513028 | -.369896 | -.355422 | .401496 | -.212015 |
| 3 | .786937 | -.498375 | -.409995 | -.431917 | .463158 | -.250656 |
| 4 | .551537 | -.342407 | -.221602 | -.356793 | .365402 | -.175748 |
| 5 | .278390 | -.260519 | -.082136 | -.373690 | .291304 | -.138998 |
| 6 | .123267 | -.288469 | -.086965 | -.473395 | .289914 | -.154134 |
| 7-8 | .015767 | -.211951 | -.107702 | -.381715 | .222813 | -.118808 |
| 9-11 | -.005332 | -.148470 | -.046260 | -.169749 | .112042 | -.065911 |
| 12-15 | .022296 | -.070594 | -.028296 | -.186714 | .085016 | -.072540 |
| 16-20 | .004060 | -.049266 | -.021389 | -.075966 | .042360 | -.037435 |
| 21-27 | -.005508 | -.021849 | -.017485 | -.025604 | .026038 | -.020379 |
| 28-36 | -.000580 | -.000634 | -.010811 | -.023074 | .017267 | -.013315 |
| 37-47 | .002669 | -.004042 | -.005392 | -.012717 | .007487 | -.006824 |
| 48-50 | .002063 | -.003592 | -.002541 | -.003776 | .003746 | -.003192 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .289242 | -.121490 | .732937 | -.141617 | .228100 | -.087959 |
| 2 | .094094 | -.465162 | .978146 | -.254420 | .280499 | -.148439 |
| 3 | .000530 | -.547048 | .704548 | -.427654 | .313780 | -.112529 |
| 4 | .071744 | -.166821 | -.305658 | -.364769 | .186596 | .006225 |
| 5 | .022044 | .002396 | -.712693 | -.060514 | .035786 | .004374 |
| 6 | .038149 | -.024544 | -.418074 | .172504 | .001530 | -.059823 |
| 7-8 | .055003 | -.035556 | -.174108 | .076306 | .047836 | -.048768 |
| 9-11 | -.066020 | -.031541 | -.113771 | .008041 | .031224 | -.019268 |
| 12-15 | .022287 | -.017759 | -.040433 | -.038315 | .017013 | -.009456 |
| 16-20 | -.019031 | .015514 | -.076247 | -.013506 | .010341 | -.005230 |
| 21-27 | -.002581 | -.005323 | .010678 | -.004729 | .004611 | -.002578 |
| 28-36 | -.000781 | -.001548 | -.037360 | .003302 | .002271 | -.002340 |
| 37-47 | -.003315 | .000726 | -.025320 | .007274 | .000505 | -.002305 |
| 48-60 | -.000276 | .000041 | -.005430 | .000737 | -.000007 | .000363 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .019529 | .014573 | .010350 | .042270 |
| 1 | .217708 | .202810 | .106210 | .316219 |
| 2 | .349837 | .302611 | .155181 | .357794 |
| 3 | .429140 | .353240 | .183730 | .354854 |
| 4 | .271117 | .260565 | .136210 | .229115 |
| 5 | .130477 | .177770 | .109480 | .149201 |
| 6 | .112322 | .150713 | .112325 | .136979 |
| 7-8 | .104676 | .115625 | .073377 | .110743 |
| 9-11 | .083337 | .070776 | .047167 | .059884 |
| 12-15 | .038902 | .049602 | .040837 | .049619 |
| 16-20 | .027466 | .028146 | .027233 | .027976 |
| 21-27 | .015980 | .019795 | .017092 | .018791 |
| 28-36 | .011577 | .012015 | .009638 | .012632 |
| 37-47 | .006766 | .007412 | .006173 | .007769 |
| 48-60 | .003998 | .004957 | .003796 | .005480 |

RUN NO 88A 46M 6-18-63 0936-1052(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.19190 10E 00 | 0.14684 10E 00 | 0.95257 10E-01 | 0.13167 10E 00 | 0.85415 10E-01 | 0.65359 10E-01 |
| 0 | .201973 | -.343585 | -.379701 | -.225519 | .396623 | -.248543 |
| 1 | .090469 | -.219592 | -.270496 | -.070542 | .171063 | -.099984 |
| 2 | .025640 | -.159233 | -.153076 | -.058515 | .125072 | -.054471 |
| 3 | .021019 | -.063020 | -.141515 | -.031095 | .077821 | -.030949 |
| 4 | -.001901 | -.020167 | -.124559 | -.017018 | .031929 | .002492 |
| 5 | -.031317 | .015830 | -.076459 | .036953 | -.011950 | .044002 |
| 6 | -.011066 | .060578 | -.027708 | .075087 | -.028030 | .094365 |
| 7 | -.083160 | .084922 | -.012659 | .038969 | -.058443 | .078546 |
| 8 | -.071547 | .071102 | -.022247 | .054106 | -.052047 | .074945 |
| 9 | -.067250 | .105470 | -.023369 | .070752 | -.078378 | .057148 |
| 10 | -.035870 | .084467 | -.093076 | .045952 | -.053269 | -.006505 |
| 11 | -.033526 | .041003 | .148046 | .058971 | -.069715 | .060514 |
| 12 | -.048171 | .034089 | .171651 | -.025813 | -.042086 | -.003026 |
| 13 | -.038944 | .097094 | .185714 | -.068380 | -.011966 | -.074767 |
| 14 | .002799 | .067784 | .195567 | -.016425 | -.034230 | -.022510 |
| 15 | .042489 | .014469 | .180209 | .033147 | -.060230 | .020657 |
| 16 | .023957 | -.007272 | .155233 | .064869 | -.039062 | .073442 |
| 17 | -.042008 | .020942 | .110275 | .050292 | -.007620 | .056662 |
| 18 | -.092763 | .056730 | .036109 | .045616 | -.044637 | .017873 |
| 19 | -.035065 | .029323 | .031006 | .065939 | -.068934 | .035207 |
| 20 | .007940 | .030471 | -.008709 | .038032 | -.057429 | .021362 |
| 21 | .046472 | .013410 | -.017363 | .014653 | -.066550 | .023021 |
| 22 | .079114 | .002196 | -.008305 | -.087296 | .027273 | -.028370 |
| 23 | .088651 | -.009397 | -.026575 | -.091908 | .019021 | -.028430 |
| 24 | .051283 | -.052747 | -.036245 | -.043463 | -.014038 | -.009642 |
| 25 | .127122 | -.082746 | -.053567 | -.079511 | -.024510 | -.043188 |
| 26 | .148303 | -.073426 | -.045277 | -.107318 | .012536 | -.061935 |
| 27 | .078399 | -.054802 | -.067762 | -.102780 | -.035102 | -.048716 |
| 28 | .032917 | -.042539 | -.083519 | -.062835 | -.043998 | -.031540 |
| 29 | .011159 | .028077 | -.078431 | .020527 | -.064011 | -.002872 |
| 30 | -.043022 | .031223 | -.090325 | .079844 | -.033103 | .009302 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 0 | -.039971 | -.047574 | -.072867 | .012569 | .042888 | .011157 |
| 1 | .021979 | -.569305 | -.805737 | -.119940 | .405221 | -.058442 |
| 2 | .414680 | -.780964 | -.925955 | -.297552 | .426909 | -.137337 |
| 3 | .563282 | -.844541 | -.644984 | -.324031 | .405556 | -.176015 |
| 4 | .475431 | -.681190 | -.112527 | -.356430 | .338237 | -.222172 |
| 5 | .412919 | -.491315 | -.042991 | -.399092 | .256232 | -.234202 |
| 6 | .097975 | -.287318 | -.182001 | -.112094 | .141730 | -.114467 |
| 7 | .060981 | -.236724 | -.178682 | .040804 | .104497 | -.015938 |
| 8 | .221953 | -.159197 | -.094467 | -.077701 | .109055 | -.025026 |
| 9-11 | .124777 | -.134359 | -.069059 | -.069551 | .089449 | -.025970 |
| 12-14 | .147429 | -.042922 | -.121328 | -.070814 | .074510 | -.071904 |
| 15-21 | .134786 | -.053194 | -.069345 | -.088608 | .080439 | -.038119 |
| 22-30 | .063686 | -.105806 | -.010116 | -.128136 | .110112 | -.053032 |

RUN NO 88A 46M 6-18-63 0936-1052(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.19190 10E 00 | 0.14684 10E 00 | 0.95257 10E-01 | 0.13167 10E 00 | 0.85415 10E-01 | 0.65359 10E-01 |
| 1 | .061659 | -.062044 | .051482 | -.101376 | .179325 | -.037966 |
| 2 | .094603 | -.026002 | .087750 | -.014510 | .204384 | -.065064 |
| 3 | .116515 | .029943 | .067398 | -.020145 | .206351 | -.017659 |
| 4 | .110822 | .009323 | .095878 | -.038379 | .249910 | -.048133 |
| 5 | .072649 | -.104349 | .128515 | -.028181 | .243262 | -.102265 |
| 6 | .062143 | -.104541 | .123097 | -.003489 | .221042 | -.118720 |
| 7 | .107120 | -.116941 | .116287 | -.040917 | .208895 | -.124142 |
| 8 | .137770 | -.058272 | .099935 | .046044 | .195304 | -.119631 |
| 9 | .111736 | -.059434 | .072221 | .026289 | .100221 | -.088494 |
| 10 | .08d486 | -.040227 | .049818 | .022256 | .032160 | -.046841 |
| 11 | .011574 | -.012752 | .026467 | -.014952 | .013914 | -.011508 |
| 12 | .033679 | -.026826 | .018431 | .035467 | .022778 | .006571 |
| 13 | .056164 | .015517 | -.013285 | .004371 | .020876 | .045710 |
| 14 | .024323 | -.028450 | -.043774 | .000383 | -.008657 | .029479 |
| 15 | -.025309 | -.005156 | -.055194 | -.000211 | -.051861 | .033576 |
| 16 | -.105895 | .042256 | -.078068 | -.042927 | -.096032 | .070728 |
| 17 | -.087431 | .033303 | -.075142 | -.043671 | -.092445 | .071284 |
| 18 | -.043366 | .062007 | -.094238 | .005521 | -.091039 | .072884 |
| 19 | -.088316 | .122686 | -.130877 | .010970 | -.089651 | .103402 |
| 20 | -.092312 | .115212 | -.132277 | -.025601 | -.086793 | .138512 |
| 21 | -.077044 | .067413 | -.108771 | -.040440 | -.074251 | .107050 |
| 22 | -.059485 | .031114 | -.076368 | -.053046 | -.081024 | .063743 |
| 23 | .020762 | .012888 | -.020211 | -.047445 | .011546 | .049575 |
| 24 | .009913 | .033626 | .000929 | .016817 | .016093 | .000835 |
| 25 | -.010719 | -.006243 | .037787 | .015003 | -.019153 | -.007886 |
| 26 | .001058 | -.034158 | .050168 | -.003052 | -.015721 | -.016621 |
| 27 | .034763 | -.084900 | .101065 | .025477 | .007606 | -.079662 |
| 28 | .025518 | -.075803 | .107636 | .026259 | -.024443 | -.095994 |
| 29 | -.014011 | -.056723 | .089476 | -.000571 | -.002365 | -.095290 |
| 30 | .049420 | -.084568 | .091844 | .035961 | .038073 | -.079117 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .074186 | -.287835 | .207256 | -.073211 | .570806 | -.114148 |
| 2 | .100662 | -.494171 | .490503 | -.012729 | .779818 | -.295021 |
| 3 | .077268 | -.333031 | .452527 | -.099005 | .772379 | -.259580 |
| 4 | .014048 | .030759 | .112951 | -.193861 | .429942 | -.032266 |
| 5 | .009020 | .050645 | .049127 | -.154742 | .247706 | .030427 |
| 6 | .020033 | .132308 | .016366 | -.092873 | .148217 | .069834 |
| 7 | .015489 | .222127 | -.020867 | -.026063 | .035740 | .059206 |
| 8 | .018120 | .079542 | .016120 | -.033945 | .028597 | -.016776 |
| 9-11 | .018067 | -.102331 | .030454 | -.044173 | .120034 | -.041610 |
| 12-14 | -.012895 | -.216350 | .037291 | -.114874 | .027837 | -.040500 |
| 15-21 | .004050 | -.042769 | .007536 | -.117395 | .062407 | -.000491 |
| 22-30 | -.001514 | -.019485 | -.019204 | -.066500 | .000080 | .018189 |

RUN NO 88A 46M 6-18-63 0936-1052(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.21401 10E 00 | 0.17207 10E 00 | 0.10075 10E 00 | 0.42399 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .486289 | .307739 | .283911 | .707036 |
| 2 | .146587 | .085413 | .139693 | .515808 |
| 3 | .145022 | .052959 | .032892 | .375558 |
| 4 | .123013 | .029915 | .029943 | .233245 |
| 5 | .017345 | -.017144 | -.026786 | .080970 |
| 6 | -.055397 | .008756 | -.111828 | -.047363 |
| 7 | -.125112 | -.113323 | -.147499 | -.149477 |
| 8 | -.168981 | -.143716 | -.168680 | -.210350 |
| 9 | -.104602 | -.166964 | -.103434 | -.270264 |
| 10 | -.146528 | -.120093 | -.042302 | -.277998 |
| 11 | -.236783 | -.092321 | -.120440 | -.334580 |
| 12 | -.215511 | -.071940 | -.087737 | -.333278 |
| 13 | -.197129 | -.058209 | -.042686 | -.323876 |
| 14 | -.199901 | -.048658 | -.080667 | -.352513 |
| 15 | -.104968 | -.001033 | -.042955 | -.331991 |
| 16 | -.074885 | -.045600 | -.051798 | -.295103 |
| 17 | -.091580 | .004380 | -.106035 | -.226506 |
| 18 | -.077512 | -.087576 | -.055780 | -.158667 |
| 19 | -.010715 | -.052610 | -.104180 | -.121563 |
| 20 | .026549 | -.046448 | -.087690 | -.038043 |
| 21 | .028854 | -.150547 | -.037274 | .018343 |
| 22 | .027529 | .047601 | .059645 | .120056 |
| 23 | .021800 | .077843 | .018344 | .160714 |
| 24 | .043674 | -.032715 | -.000476 | .161575 |
| 25 | .151809 | -.023956 | .096561 | .180329 |
| 26 | .125682 | .027663 | .139601 | .170372 |
| 27 | .081591 | -.048515 | .102070 | .152756 |
| 28 | .060976 | -.056839 | .071386 | .144776 |
| 29 | .051562 | -.043314 | -.040475 | .111609 |
| 30 | .009290 | -.041904 | -.056260 | .118149 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 |
| 0 | .018933 | .014506 | .040856 | .051119 |
| 1 | .210989 | .124448 | .635104 | .749890 |
| 2 | .280800 | .140839 | .845337 | .982049 |
| 3 | .276128 | .153344 | .878295 | .838246 |
| 4 | .163786 | .134774 | .794964 | .398708 |
| 5 | .106302 | .095980 | .708010 | .268085 |
| 6 | .096564 | .055170 | .474443 | .196279 |
| 7 | .094970 | .054961 | .364963 | .115552 |
| 8 | .078764 | .068859 | .335022 | .082191 |
| 9-11 | .067553 | .079316 | .332766 | .072966 |
| 12-14 | .096522 | .061991 | .423775 | .070574 |
| 15-21 | .066430 | .061628 | .291673 | .054340 |
| 22-30 | .031654 | .055088 | .406958 | .050621 |

RUN NO 88A 15M 6-18-63 0936-1052(EST)
 RUN NO 88A 46M 6-18-63 0936-1052(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .340092 | .202846 | .310422 | .010654 |
| 1 | .197197 | .472027 | .355124 | .214356 |
| 2 | .130442 | .454738 | .314080 | .170320 |
| 3 | .054409 | .345155 | .268253 | .089776 |
| 4 | .067434 | .159993 | .265038 | .108906 |
| 5 | .025398 | .092211 | .249816 | .161763 |
| 6 | .127030 | .115211 | .193604 | .203324 |
| 7-8 | .091464 | .121835 | .156027 | .121397 |
| 9-11 | .085996 | .130273 | .136739 | .081865 |
| 12-15 | .134811 | .094476 | .060305 | .088094 |
| 16-20 | .137521 | .146812 | .080524 | .099411 |
| 21-27 | .115362 | .115446 | .133419 | .133576 |
| 28-36 | .112730 | .113388 | .082384 | .088842 |
| 37-47 | .077904 | .094401 | .061035 | .115394 |
| 48-60 | .108691 | .121034 | .078597 | .100074 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .157785 | .945798 | .072357 | .650300 |
| 1 | .319549 | .497906 | .154585 | .263813 |
| 2 | .317676 | .380501 | .185969 | .329379 |
| 3 | .356996 | .455927 | .345320 | .381741 |
| 4 | .355282 | .611654 | .500017 | .281810 |
| 5 | .481972 | .662994 | .422741 | .184162 |
| 6 | .427627 | .312970 | .265082 | .035737 |
| 7 | .220746 | .270476 | .256526 | .254322 |
| 8 | .174863 | .348557 | .402723 | .305968 |
| 9-11 | .205665 | .574639 | .411079 | .341100 |
| 12-14 | .296148 | .440850 | .301871 | .081232 |
| 15-21 | .331613 | .321402 | .338328 | .259319 |
| 22-30 | .231005 | .124456 | .301778 | .243197 |

RUN NO 89A 46M 6-18-63 1336-1437(EST)

GROSS STATISTICS

CLEAR
UNSTABLE

WIND SPEED 6.75 M/SEC
WIND DIRECTION 222 DEG
SOLAR RAD. 1.17 LY/MIN

SIGMA A 8.80 DEG
SIGMA E 7.3 DEG

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.14138E 01 | 0.11438E 01 | 0.73126E 00 | 0.82235E 00 |
| V | 0.94921E 00 | 0.90907E 00 | 0.80081E 00 | 0.52361E 00 |
| W | 0.55719E 00 | 0.50859E 00 | 0.41600E-00 | 0.25222E-00 |
| T | 0.11721E-00 | 0.35034E-01 | 0.16796E-01 | 0.27346E-01 |
| E | 0.14601E 01 | 0.12809E 01 | 0.97405E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.17615 | 0.15844 | 0.12669 | 0.13435 |
| V | 0.14434 | 0.14125 | 0.13257 | 0.10720 |
| W | 0.11059 | 0.10565 | 0.09555 | 0.07440 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.59398E-01 | -0.28605E-01 | -0.14751E-01 | -0.13199E-01 |
| U,W | -0.38761E-00 | -0.29872E-00 | -0.16698E-00 | -0.23144E-00 |
| U,T | -0.18847E-00 | -0.11123E-00 | -0.46289E-01 | -0.93964E-01 |
| V,W | -0.95399E-01 | -0.12869E-00 | -0.12632E-00 | -0.61616E-01 |
| V,T | 0.41650E-01 | 0.55718E-01 | 0.41739E-01 | 0.37514E-01 |
| W,T | 0.54786E-01 | 0.18430E-01 | -0.18590E-02 | 0.24574E-01 |
| WE | 0.26429E-00 | 0.19075E-00 | 0.57109E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.05127 | -0.02805 | -0.01928 | -0.02011 |
| U,W | -0.43672 | -0.39166 | -0.30275 | -0.50818 |
| U,T | -0.46300 | -0.55563 | -0.41769 | -0.62659 |
| V,W | -0.13118 | -0.18927 | -0.21885 | -0.16955 |
| V,T | 0.12487 | 0.31221 | 0.35990 | 0.31350 |
| W,T | 0.21438 | 0.13807 | -0.02224 | 0.29590 |

RUN NU 89A 46M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.76528 10E 00 | 0.55166 10E 00 | 0.11085 10E 00 | 0.57733 10E 00 | 0.11601 10E 00 | 0.83626 10E-01 |
| 0 | -.019390 | -.302775 | -.417376 | -.218781 | .359807 | -.022143 |
| 1 | -.009024 | -.272095 | -.385338 | -.190341 | .319488 | .010534 |
| 2 | -.002057 | -.224116 | -.333387 | -.143162 | .256287 | .053643 |
| 3 | -.001327 | -.182603 | -.289451 | -.092376 | .206741 | .081914 |
| 4 | -.002066 | -.147566 | -.247619 | -.053324 | .162962 | .094332 |
| 5 | -.002651 | -.115297 | -.204939 | -.019641 | .123951 | .095421 |
| 6 | -.006021 | -.092995 | -.161616 | -.009063 | .088827 | .099140 |
| 7 | -.012443 | -.070239 | -.126602 | .031343 | .062332 | .097455 |
| 8 | -.019050 | -.048521 | -.100382 | .044620 | .041610 | .086493 |
| 9 | -.021266 | -.032309 | -.080850 | .057480 | .023338 | .083332 |
| 10 | -.022052 | -.018860 | -.056336 | .069361 | .005928 | .074541 |
| 11 | -.022955 | -.001154 | -.029045 | .073385 | -.003677 | .058099 |
| 12 | -.021010 | .028626 | -.004979 | .073692 | -.013308 | .041399 |
| 13 | -.020277 | .055055 | .016011 | .068921 | -.024623 | .025027 |
| 14 | -.021518 | .075286 | .040386 | .058184 | -.041180 | .011051 |
| 15 | -.00784 | .088006 | .061548 | .043685 | -.054151 | -.004129 |
| 16 | -.013262 | .096673 | .077322 | .028371 | -.062410 | -.019903 |
| 17 | -.011371 | .099486 | .096075 | .022526 | -.067190 | -.037518 |
| 18 | -.002485 | .099335 | .111416 | .023947 | -.077376 | -.053447 |
| 19 | .006338 | .101736 | .124696 | .030274 | -.089344 | -.060466 |
| 20 | .014186 | .102994 | .129498 | .041971 | -.103977 | -.059365 |
| 21 | .018676 | .098679 | .133514 | .048103 | -.116780 | -.053836 |
| 22 | .018553 | .085512 | .139104 | .052148 | -.128030 | -.049767 |
| 23 | .010162 | .077817 | .139166 | .051402 | -.137455 | -.049512 |
| 24 | .009852 | .075291 | .138505 | .045682 | -.146968 | -.043246 |
| 25 | .018332 | .069887 | .139232 | .046762 | -.152537 | -.034380 |
| 26 | .018878 | .068595 | .137680 | .053442 | -.151576 | -.036407 |
| 27 | .016582 | .066791 | .138082 | .058176 | -.141307 | -.041318 |
| 28 | .015129 | .063634 | .140514 | .051752 | -.123715 | -.042660 |
| 29 | .017689 | .050990 | .141386 | .033410 | -.107716 | -.043227 |
| 30 | .022379 | .031857 | .134813 | .020119 | -.091439 | -.040761 |
| 31 | .024322 | .015799 | .121509 | .001512 | -.071922 | -.035431 |
| 32 | .032033 | .003591 | .104856 | -.024898 | -.052730 | -.030950 |
| 33 | .037060 | -.007875 | .084583 | -.044330 | -.034694 | -.028579 |
| 34 | .036802 | -.015872 | .062705 | -.060336 | -.020536 | -.029326 |
| 35 | .036233 | -.020896 | .039375 | -.077465 | -.003101 | -.033390 |
| 36 | .035723 | -.026556 | .020660 | -.091964 | .011309 | -.041840 |
| 37 | .033128 | -.029223 | .004618 | -.096345 | .020634 | -.045078 |
| 38 | .028914 | -.032376 | -.008624 | -.093044 | .023155 | -.039373 |
| 39 | .017061 | -.025718 | -.020241 | -.079515 | .023405 | -.029250 |
| 40 | .007164 | -.013220 | -.030593 | -.063506 | .019238 | -.024248 |
| 41 | .000128 | -.002838 | -.040452 | -.050843 | .013361 | -.020153 |
| 42 | -.005121 | .001908 | -.044803 | -.046105 | .010542 | -.010102 |
| 43 | -.009300 | .002455 | -.041516 | -.043095 | .005162 | -.002429 |
| 44 | -.016319 | -.005273 | -.035865 | -.036097 | .005233 | -.000277 |
| 45 | -.020996 | -.010374 | -.031974 | -.033358 | .010976 | -.001087 |
| 46 | -.023709 | -.014444 | -.022486 | -.021200 | .011919 | .001642 |
| 47 | -.022574 | -.012905 | -.014866 | -.008044 | .013343 | .011026 |
| 48 | -.020939 | -.003299 | -.006739 | -.007274 | .015672 | .014839 |
| 49 | -.018837 | .001965 | .005699 | .009878 | .020503 | .006776 |
| 50 | -.014964 | .007288 | .022179 | .008762 | .028942 | .007972 |
| 51 | -.012314 | .008750 | .039865 | .009508 | .036043 | .012748 |
| 52 | -.009152 | .012825 | .053301 | .023175 | .037291 | .012911 |
| 53 | -.008942 | .019324 | .060709 | .032445 | .033056 | .006688 |
| 54 | -.010279 | .025666 | .058350 | .023234 | .026956 | -.006834 |
| 55 | -.004832 | .035255 | .051474 | .013198 | .018903 | -.013044 |
| 56 | -.001157 | .048009 | .045281 | .003366 | .016491 | -.014149 |
| 57 | -.000556 | .066209 | .039820 | -.008588 | .022067 | -.018007 |
| 58 | -.001226 | .079472 | .033732 | -.013327 | .018844 | -.024320 |
| 59 | -.001670 | .081610 | .026878 | -.005159 | .013530 | -.018669 |
| 60 | -.005832 | .074873 | .022281 | .001248 | .007011 | -.014699 |

RUN NO 89A 46M 6-18-63 1336-1637(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.76528 10E 00 | 0.55166 10E 00 | 0.11085 10E 00 | 0.57733 10E 00 | 0.11601 10E 00 | 0.83626 10E-01 |
| 1 | .028379 | -.037547 | -.018809 | -.004048 | .042425 | -.022244 |
| 2 | .054058 | -.066803 | -.018272 | .005971 | .037094 | -.033735 |
| 3 | .077145 | -.091672 | -.011919 | .017917 | .081714 | -.046809 |
| 4 | .097306 | -.112429 | -.005862 | .034941 | .094517 | -.062583 |
| 5 | .111028 | -.127853 | -.004683 | .043454 | .103934 | -.075309 |
| 6 | .118805 | -.128324 | -.007987 | .043881 | .111231 | -.081207 |
| 7 | .119650 | -.117837 | -.015019 | .043885 | .118370 | -.079362 |
| 8 | .118602 | -.106029 | -.022398 | .048994 | .119505 | -.074943 |
| 9 | .118380 | -.091007 | -.027658 | .057846 | .121647 | -.064395 |
| 10 | .111551 | -.086090 | -.034222 | .059207 | .120422 | -.056255 |
| 11 | 100544 | -.084645 | -.039864 | .058682 | .118568 | -.047718 |
| 12 | .089430 | -.082417 | -.042394 | .060881 | .112526 | -.036319 |
| 13 | .081935 | -.077471 | -.042960 | .068657 | .110175 | -.037244 |
| 14 | .073496 | -.076175 | -.043763 | .070528 | .107450 | -.042738 |
| 15 | .064398 | -.069287 | -.043687 | .070170 | .007887 | -.045537 |
| 16 | .059701 | -.061672 | -.039245 | .070454 | .085022 | -.035876 |
| 17 | .055026 | -.053987 | -.032183 | .065750 | .072984 | -.026077 |
| 18 | .045838 | -.044940 | -.026345 | .052216 | .070508 | -.020174 |
| 19 | .039348 | -.042449 | -.024796 | .041286 | .069920 | -.024471 |
| 20 | .030241 | -.037707 | -.021708 | .028648 | .060112 | -.033456 |
| 21 | .016670 | -.034618 | -.018282 | .008566 | .046785 | -.032269 |
| 22 | .007793 | -.039164 | -.013645 | -.005101 | .034777 | -.021077 |
| 23 | .003669 | -.043432 | -.010646 | -.014385 | .020516 | -.009730 |
| 24 | .003381 | -.039818 | -.015475 | -.017677 | .008352 | .001007 |
| 25 | .001166 | -.031088 | -.022261 | -.024266 | -.003519 | .011926 |
| 26 | -.006951 | -.020721 | -.028795 | -.034625 | -.015579 | .025269 |
| 27 | -.022349 | -.015625 | -.029417 | -.036036 | -.032377 | .031227 |
| 28 | -.035517 | -.005619 | -.028693 | -.031089 | -.047323 | .031434 |
| 29 | -.041807 | .008097 | -.028556 | -.030420 | -.059134 | .034874 |
| 30 | -.045370 | .021253 | -.026185 | -.036192 | -.066880 | .046133 |
| 31 | -.048960 | .031604 | -.029087 | -.040484 | -.071317 | .059400 |
| 32 | -.052642 | .038409 | -.023129 | -.044452 | -.077311 | .064251 |
| 33 | -.052747 | .046067 | -.009086 | -.038693 | -.086212 | .073000 |
| 34 | -.051943 | .056196 | .004115 | -.027997 | -.097511 | .073265 |
| 35 | -.044245 | .065632 | .013443 | -.017762 | -.097003 | .061976 |
| 36 | -.037541 | .073410 | .014695 | -.012803 | -.091662 | .059315 |
| 37 | -.037351 | .078989 | .017326 | -.021759 | -.086558 | .059289 |
| 38 | -.046031 | .076209 | .016120 | -.033300 | -.082317 | .058080 |
| 39 | -.051113 | .065755 | .019694 | -.036330 | -.079575 | .056232 |
| 40 | -.046008 | .053543 | .019867 | -.033949 | -.074867 | .054346 |
| 41 | -.041526 | .044291 | .017578 | -.030965 | -.071845 | .048817 |
| 42 | -.039263 | .037340 | .019029 | -.033249 | -.065885 | .039920 |
| 43 | -.035239 | .034468 | .014723 | -.041305 | -.050420 | .025817 |
| 44 | -.029962 | .034833 | .012550 | -.039307 | -.039120 | .013499 |
| 45 | -.025238 | .029358 | .011125 | -.035322 | -.024769 | .000050 |
| 46 | -.024964 | .021824 | .004038 | -.030878 | -.014781 | -.013317 |
| 47 | -.026981 | .016620 | .000522 | -.020946 | -.011311 | -.027959 |
| 48 | -.029760 | .011074 | -.006720 | -.008519 | -.013055 | -.033724 |
| 49 | -.038925 | .004840 | -.015940 | -.002645 | -.010943 | -.034839 |
| 50 | -.042129 | .004466 | -.023284 | -.005026 | -.004233 | -.040997 |
| 51 | -.041245 | .009801 | -.022851 | .018860 | .000628 | -.051169 |
| 52 | -.039365 | .008761 | -.018800 | .032514 | .005555 | -.060548 |
| 53 | -.027657 | .004796 | -.019500 | .039422 | .009908 | -.063163 |
| 54 | -.011166 | -.000022 | -.017365 | .033518 | .019083 | -.052746 |
| 55 | .008791 | .002101 | -.010033 | .034339 | .029608 | -.044191 |
| 56 | .025759 | .001585 | -.003445 | .031543 | .035026 | -.037155 |
| 57 | .035416 | -.001117 | .000672 | .025672 | .035462 | -.031644 |
| 58 | .041582 | -.006201 | .004557 | .020881 | .036622 | -.034299 |
| 59 | .044460 | -.015982 | .003007 | .018255 | .033084 | -.037444 |
| 60 | .046663 | -.024939 | -.000152 | .022719 | .033099 | -.044008 |

RUN NO 89A 46M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.73125 10E 00 | 0.80089 10E 00 | 0.41618 10E 00 | 0.16804 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .866221 | .826247 | .750466 | .848564 |
| 2 | .694719 | .614677 | .465656 | .686191 |
| 3 | .558575 | .459156 | .278482 | .560439 |
| 4 | .442421 | .337981 | .165259 | .455196 |
| 5 | .347129 | .231067 | .103604 | .360799 |
| 6 | .271865 | .146482 | .070645 | .269730 |
| 7 | .212594 | .080187 | .037196 | .193434 |
| 8 | .150791 | .026273 | -.003939 | .141158 |
| 9 | -.086132 | -.035568 | -.047906 | .101887 |
| 10 | .027721 | -.086344 | -.0790 | .059021 |
| 11 | -.026519 | -.120186 | -.093353 | .021231 |
| 12 | -.080572 | -.145397 | -.111643 | -.011569 |
| 13 | -.133449 | -.167163 | -.129479 | -.040516 |
| 14 | -.175141 | .177705 | -.139419 | -.073802 |
| 15 | -.207089 | -.183224 | -.150003 | -.105347 |
| 16 | -.232706 | -.190505 | -.150962 | -.136379 |
| 17 | -.252697 | -.194836 | -.141253 | -.160259 |
| 18 | -.266651 | -.202920 | -.136935 | -.185880 |
| 19 | -.276659 | -.206410 | -.146988 | -.216660 |
| 20 | -.280261 | -.205821 | -.161808 | -.242713 |
| 21 | -.281357 | -.210972 | -.171927 | -.266611 |
| 22 | -.288220 | -.215373 | -.166038 | -.283876 |
| 23 | -.290554 | -.219666 | -.158312 | -.299953 |
| 24 | -.288687 | -.220103 | -.154352 | -.308315 |
| 25 | -.284396 | -.208407 | -.161696 | -.310478 |
| 26 | -.273408 | -.200422 | -.166429 | -.309105 |
| 27 | -.256124 | -.196892 | -.163195 | -.306661 |
| 28 | -.241015 | -.187052 | -.160247 | -.291840 |
| 29 | -.215960 | -.173131 | -.143300 | -.265682 |
| 30 | -.178987 | -.158490 | -.104166 | -.234287 |
| 31 | -.139823 | -.135563 | -.057926 | -.195843 |
| 32 | -.112235 | -.111888 | -.025480 | -.161600 |
| 33 | -.081164 | -.089998 | -.003612 | -.132956 |
| 34 | -.048771 | -.067298 | .008551 | -.098569 |
| 35 | -.026641 | -.036003 | .023127 | -.060912 |
| 36 | -.011837 | .001495 | .055256 | -.030418 |
| 37 | .008441 | .030955 | .078559 | -.011251 |
| 38 | .031057 | .050012 | .087935 | -.002776 |
| 39 | .050737 | .066061 | .085879 | -.003780 |
| 40 | .065602 | .071862 | .081482 | -.006879 |
| 41 | .073697 | .060594 | .066641 | -.009684 |
| 42 | .076556 | .054866 | .051721 | -.015164 |
| 43 | .074758 | .045260 | .030440 | -.020594 |
| 44 | .075657 | .038604 | .034668 | -.022016 |
| 45 | .075148 | .041361 | .051152 | -.017657 |
| 46 | .069895 | .039642 | .060207 | -.010181 |
| 47 | .058361 | .040258 | .064190 | -.011435 |
| 48 | .042369 | .044008 | .053666 | -.010970 |
| 49 | .024159 | .043460 | .038934 | -.008983 |
| 50 | .008791 | .038586 | .019579 | -.014363 |
| 51 | -.002724 | .038812 | -.000215 | -.023157 |
| 52 | -.014638 | .038757 | -.009638 | -.030838 |
| 53 | -.030280 | .045650 | -.013015 | -.030905 |
| 54 | -.039463 | .058291 | -.014250 | -.022851 |
| 55 | -.044528 | .070666 | -.020596 | -.018675 |
| 56 | -.049662 | .082067 | -.026134 | -.015429 |
| 57 | -.051697 | .087886 | -.037448 | -.007025 |
| 58 | -.048391 | .081963 | -.036119 | .006096 |
| 59 | -.049259 | .078803 | -.025437 | .011476 |
| 60 | -.045389 | .069171 | -.026145 | .013692 |

RUN NO 89A 46M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-02 | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 |
| 0 | -.026555 | -.031417 | -.012520 | .003295 | .036392 | .040085 |
| 1 | -.688058 | -.234683 | -.097301 | .010033 | .592407 | .299806 |
| 2 | -.708884 | -.300969 | -.109081 | -.096560 | .842282 | .231196 |
| 3 | .000245 | -.356344 | -.098347 | -.220733 | .821470 | .176168 |
| 4 | .530282 | -.237941 | -.044965 | -.158016 | .385588 | .022028 |
| 5 | .247391 | -.104837 | -.021992 | -.096879 | .161785 | -.067102 |
| 6 | .213223 | -.063886 | -.022694 | -.156490 | .237486 | -.124540 |
| 7-8 | -.023769 | -.040335 | -.011825 | -.113333 | .221244 | -.093291 |
| 9-11 | -.093084 | -.043597 | -.010199 | -.034714 | .098604 | -.036066 |
| 12-15 | -.091377 | -.026264 | -.004038 | -.028396 | .058042 | -.036431 |
| 16-20 | -.023448 | -.009247 | -.001503 | -.010946 | .034134 | -.026670 |
| 21-27 | -.033720 | -.008476 | -.001900 | -.006243 | .020613 | -.014545 |
| 28-36 | -.035799 | -.004126 | -.000969 | -.002863 | .014183 | -.007202 |
| 37-47 | -.017601 | -.002149 | -.000490 | -.001501 | .006775 | -.004344 |
| 48-60 | -.011057 | -.001091 | -.000164 | -.001677 | .002224 | -.002016 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 1 | .169785 | -.166490 | -.229742 | .065579 | .283066 | -.045845 |
| 2 | .306316 | -.234678 | -.171560 | .143956 | .588694 | -.205655 |
| 3 | .319353 | -.201588 | -.078517 | .150864 | .582441 | -.245062 |
| 4 | .183917 | -.092014 | -.007568 | .056355 | .210234 | -.083428 |
| 5 | .101131 | -.087916 | -.020559 | -.012520 | .080011 | -.053599 |
| 6 | .078284 | -.095877 | .019987 | -.037316 | .100565 | -.086057 |
| 7-8 | .041882 | -.040751 | .042750 | .002142 | .057435 | -.053513 |
| 9-11 | .008823 | -.027390 | -.018172 | .005720 | .023775 | -.003523 |
| 12-15 | -.000945 | .001631 | -.017750 | -.007405 | .019469 | .010382 |
| 16-20 | -.001178 | .003733 | -.017160 | -.007139 | .014571 | -.004190 |
| 21-27 | -.000409 | -.003445 | -.007704 | -.004283 | .006289 | -.002574 |
| 28-36 | .000303 | -.000983 | -.003720 | -.000036 | .003267 | -.002290 |
| 37-47 | .000898 | .000150 | -.001987 | -.000974 | .002081 | -.000943 |
| 48-60 | -.000249 | -.000238 | -.000805 | -.000852 | .000123 | -.000587 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-00 | 10E-01 | 10E-02 |
| 0 | .010450 | .004005 | .020213 | .030969 |
| 1 | .101270 | .073538 | .256208 | .284517 |
| 2 | .134219 | .113906 | .421016 | .324249 |
| 3 | .141231 | .127114 | .522179 | .291619 |
| 4 | .081929 | .084979 | .356193 | .148606 |
| 5 | .043252 | .059725 | .241576 | .075770 |
| 6 | .036012 | .055903 | .256730 | .086785 |
| 7-8 | .024199 | .036769 | .198983 | .072710 |
| 9-11 | .016990 | .021692 | .139695 | .040550 |
| 12-15 | .011989 | .014999 | .115619 | .022073 |
| 16-20 | .006664 | .009503 | .083195 | .013449 |
| 21-27 | .003730 | .005678 | .046026 | .010946 |
| 28-36 | .002882 | .004324 | .029365 | .006674 |
| 37-47 | .001618 | .002366 | .018761 | .005084 |
| 48-60 | .001013 | .001525 | .012206 | .003535 |

RUN NO 89A 46M 6-18-63 1336-1437(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.65565 10E 00 | 0.45505 10E 00 | 0.14984 10E 00 | 0.36347 10E 00 | 0.11969 10E 00 | 0.83069 10E-01 |
| 0 | -.020131 | -.508599 | -.627073 | -.169520 | .313429 | .295828 |
| 1 | -.037727 | -.315953 | -.471618 | .039057 | .144921 | .286559 |
| 2 | -.003547 | -.163857 | -.272434 | .027141 | .016888 | .138067 |
| 3 | .031962 | -.118827 | -.127388 | -.027900 | -.042757 | .097636 |
| 4 | .026926 | -.024876 | -.080882 | -.113646 | -.001817 | .021678 |
| 5 | .005783 | .013574 | .013275 | .001692 | -.009622 | .012216 |
| 6 | -.027438 | .108080 | .039767 | .021631 | .018268 | -.013094 |
| 7 | -.016519 | .055569 | .042910 | .062010 | .031067 | -.010712 |
| 8 | -.085778 | .074680 | .019407 | .073195 | .031333 | -.015949 |
| 9 | -.064229 | .099517 | .064666 | .064023 | -.029673 | .010669 |
| 10 | -.037940 | .148264 | .048506 | -.029034 | -.014756 | -.072553 |
| 11 | -.034063 | .141773 | .059046 | -.036038 | -.043840 | -.055760 |
| 12 | .014405 | .123856 | .098116 | .002979 | -.087880 | -.053673 |
| 13 | .087859 | .063979 | .128063 | .101727 | -.121469 | .010368 |
| 14 | .086690 | .016155 | .150525 | .101758 | -.106880 | -.043129 |
| 15 | .016433 | .009322 | .122489 | .066008 | -.077868 | -.044963 |
| 16 | -.029253 | -.005025 | .10150 | -.031884 | -.043220 | -.079550 |
| 17 | -.002890 | .010345 | .083868 | -.006788 | -.018275 | -.115249 |
| 18 | -.017098 | .030844 | .08 048 | -.031270 | .029280 | -.147532 |
| 19 | .022058 | -.000827 | .096356 | .014932 | .041317 | -.136680 |
| 20 | .059334 | .014734 | .131306 | -.026207 | .014917 | -.103566 |
| 21 | .061912 | .048372 | .159127 | -.154203 | -.007998 | -.139475 |
| 22 | -.000944 | .089226 | .158725 | -.110932 | .021123 | -.141853 |
| 23 | .004416 | .113931 | .119856 | .011317 | .012715 | -.117902 |
| 24 | .057584 | .049006 | .097519 | -.013960 | -.033491 | -.066607 |
| 25 | -.018938 | .055529 | -.004171 | .005396 | .024231 | -.008102 |
| 26 | -.030897 | .022616 | -.064893 | -.019880 | .048489 | .019156 |
| 27 | -.050569 | .019938 | -.121462 | .053868 | .015841 | .045996 |
| 28 | -.010722 | .000465 | -.125032 | -.016078 | .049910 | .069468 |
| 29 | .029883 | -.048764 | -.165650 | -.017111 | .042993 | .121660 |
| 30 | .029133 | -.126750 | -.171671 | -.007998 | .009954 | .172298 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 0 | -.014964 | -.024533 | -.024617 | .058573 | .018165 | .064498 |
| 1 | -.087536 | -.275780 | -.187173 | .073272 | .309928 | .648853 |
| 2 | -.030429 | -.320626 | -.162620 | -.477199 | .424956 | .516552 |
| 3 | .054980 | -.366795 | -.119483 | -.691067 | .341928 | .294035 |
| 4 | .076935 | -.304568 | -.093755 | -.101116 | .057210 | .301117 |
| 5 | .026733 | -.155752 | -.077811 | -.050997 | .047542 | .277731 |
| 6 | -.084155 | -.102418 | -.072277 | -.191353 | .294430 | .153750 |
| 7 | -.153659 | -.124900 | -.067842 | .284151 | .382130 | .145925 |
| 8 | -.062032 | -.121511 | -.036089 | .651454 | .266707 | .165749 |
| 9-11 | -.010585 | -.044975 | -.025559 | -.073261 | .232966 | .063866 |
| 12-14 | .003422 | -.057458 | -.016528 | -.380475 | .137614 | .054015 |
| 15-21 | .012055 | -.046579 | -.009454 | -.514826 | .090318 | .014360 |
| 22-30 | .012270 | -.032033 | -.004960 | -.406532 | .071936 | -.045881 |

RUN NO 89A 46M 6-18-63 1336-1437(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.65565 10E 00 | 0.45505 10E 00 | 0.14984 10E 00 | 0.56347 10E 00 | 0.11969 10E 00 | 0.83069 10E-01 |
| 1 | .107668 | -.159011 | -.066243 | .098403 | .085324 | -.053602 |
| 2 | .031095 | -.121291 | -.109435 | .021301 | .077773 | -.021767 |
| 3 | -.002681 | -.092808 | -.118216 | -.023817 | .005330 | .003942 |
| 4 | -.040414 | -.029355 | -.111188 | -.012389 | -.005529 | .000572 |
| 5 | .011201 | -.065426 | -.099780 | .033706 | .064515 | -.060153 |
| 6 | .079102 | -.087851 | -.081964 | .052702 | .103819 | -.065638 |
| 7 | .070770 | -.091193 | -.049817 | .031057 | .113868 | -.033948 |
| 8 | .019916 | -.036103 | -.029780 | .005387 | .071208 | -.035485 |
| 9 | .008301 | -.007820 | -.041150 | .061155 | .089933 | -.064408 |
| 10 | -.007583 | -.021322 | -.062343 | .041631 | .002426 | -.049784 |
| 11 | .031660 | -.062346 | -.035681 | .000554 | .038757 | -.082608 |
| 12 | .092740 | -.049125 | -.018463 | .058354 | .067779 | -.070391 |
| 13 | .130854 | -.013423 | .045128 | .089325 | .130268 | -.110299 |
| 14 | .088678 | .035974 | .082655 | .061350 | .105281 | -.082059 |
| 15 | .087793 | .023189 | .065317 | .006566 | .017518 | -.009010 |
| 16 | .072394 | .016985 | .039730 | .037225 | -.010135 | .030831 |
| 17 | -.012485 | -.030712 | .023679 | -.028306 | -.026028 | .001469 |
| 18 | -.095057 | .011363 | .020877 | -.067646 | -.040585 | .017423 |
| 19 | -.069243 | .053029 | .022988 | -.034277 | -.069545 | .058395 |
| 20 | -.076992 | .053979 | .011901 | -.041420 | -.057637 | .067917 |
| 21 | -.061579 | -.003732 | -.002015 | -.018960 | -.073880 | .026913 |
| 22 | -.068886 | -.045468 | -.016936 | -.036936 | -.083177 | .026514 |
| 23 | -.063907 | -.058750 | -.004219 | -.010781 | -.078711 | .023552 |
| 24 | -.069504 | -.008990 | .023402 | -.134138 | -.095866 | .046094 |
| 25 | -.078400 | .040722 | .035253 | -.096032 | -.085478 | .027459 |
| 26 | .013168 | .045440 | .026128 | .029322 | -.031457 | -.004620 |
| 27 | .019479 | .050501 | .021772 | .071958 | -.014642 | -.021448 |
| 28 | -.049912 | .071737 | -.021459 | -.005034 | .017360 | .027927 |
| 29 | -.093744 | .067908 | -.071418 | -.048159 | -.023108 | .054390 |
| 30 | .010373 | .030232 | -.031876 | -.049898 | -.019194 | .036330 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .201137 | -.140994 | -.327318 | .824076 | .513938 | -.304336 |
| 2 | .150335 | -.143917 | -.520696 | .711833 | .479935 | -.23281 |
| 3 | -.032612 | -.135284 | -.617964 | .037609 | .149610 | -.032920 |
| 4 | -.058146 | -.083195 | -.375528 | -.248167 | -.033798 | .089460 |
| 5 | .086575 | -.061552 | -.149170 | .119191 | .075104 | -.008264 |
| 6 | .054183 | -.072510 | -.198531 | .198867 | .037849 | -.060498 |
| 7 | -.064612 | -.057379 | -.266756 | -.040369 | -.081009 | -.000229 |
| 8 | -.046034 | -.054910 | -.154445 | -.105827 | -.075389 | .044557 |
| 9-11 | .110361 | -.070453 | .025954 | .328879 | .214915 | -.033294 |
| 12-14 | .085210 | -.063760 | -.056677 | .459226 | .113777 | -.070482 |
| 15-21 | .030509 | -.017423 | .000781 | .261856 | .019428 | -.016221 |
| 22-30 | .033915 | -.026473 | .008538 | .087780 | .013561 | -.024460 |

RUN NC 89A 464 6-18-63 1336-1437(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.82084 10E 00 | 0.52371 10E 00 | 0.25227 10E 00 | 0.27354 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .559121 | .1761C7 | .327611 | .708546 |
| 2 | .227867 | -.096189 | .121434 | .420545 |
| 3 | .097158 | -.153173 | .030734 | .212752 |
| 4 | .055484 | -.052291 | .075265 | .124156 |
| 5 | -.057838 | -.041372 | .002139 | .041376 |
| 6 | -.141206 | .046968 | -.071432 | .019245 |
| 7 | -.126020 | -.008966 | -.081629 | -.007864 |
| 8 | -.123677 | -.041037 | -.133751 | -.049018 |
| 9 | -.146488 | -.066372 | -.224622 | -.132164 |
| 10 | -.096314 | -.021612 | -.157640 | -.179666 |
| 11 | -.107049 | -.007518 | -.136770 | -.223698 |
| 12 | -.200659 | -.057524 | -.008593 | -.235836 |
| 13 | -.203209 | -.099331 | -.138037 | -.280569 |
| 14 | -.094604 | -.050799 | -.107622 | -.287330 |
| 15 | -.037360 | -.024343 | -.056082 | -.255728 |
| 16 | -.013P84 | -.096841 | .072125 | -.206556 |
| 17 | .010749 | -.082444 | -.030156 | -.160047 |
| 18 | -.011710 | .000430 | -.070036 | -.118258 |
| 19 | .012528 | -.050450 | -.024819 | -.087792 |
| 20 | -.019011 | .015177 | -.012656 | -.113700 |
| 21 | -.089989 | .102896 | .047781 | -.121252 |
| 22 | -.164462 | .004014 | .040884 | -.103493 |
| 23 | -.139093 | -.109356 | -.100875 | -.063611 |
| 24 | -.080720 | -.023408 | -.107325 | -.022411 |
| 25 | -.028102 | .051285 | -.140321 | .085963 |
| 26 | .013086 | .104408 | -.041674 | .156176 |
| 27 | .055176 | .031079 | -.058414 | .185683 |
| 28 | .076147 | .022403 | -.049022 | .212814 |
| 29 | .131332 | -.023336 | -.005738 | .257083 |
| 30 | .146872 | .048973 | -.017041 | .234239 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .010127 | .010167 | .016823 | .060748 |
| 1 | .085740 | .174375 | .182231 | .512538 |
| 2 | .094029 | .229339 | .222340 | .519650 |
| 3 | .102959 | .210122 | .259922 | .396770 |
| 4 | .085792 | .170142 | .207743 | .213501 |
| 5 | .055199 | .206562 | .126398 | .152444 |
| 6 | .052392 | .261498 | .091105 | .167249 |
| 7 | .054955 | .264197 | .077561 | .176725 |
| 8 | .034842 | .284193 | .092716 | .127220 |
| 9-11 | .024883 | .328292 | .117146 | .092583 |
| 12-14 | .027444 | .251336 | .080589 | .045653 |
| 15-21 | .018229 | .210042 | .081205 | .031923 |
| 22-30 | .012495 | .202258 | .087256 | .023652 |

RUN NO 89A 91M 6-18-63 1336-1437(EST)

GROSS STATISTICS

| | | |
|-------------------|------------------------|-----------------|
| CLEAR UNSTABLE | WIND SPEED 7.55 M/SEC | SIGMA A 6.6 DEG |
| | WIND DIRECTION 233 DEG | SIGMA E 6.0 DEG |
| | SOLAR RAD. 1.17 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.12273E 01 | 0.80555E 00 | 0.58084E 00 | 0.56132E 00 |
| V | 0.70148E 00 | 0.63301E 00 | 0.53068E 00 | 0.35020E-00 |
| W | 0.51501E 00 | 0.48111E-00 | 0.41854E-00 | 0.23931E-00 |
| T | 0.11664E-00 | 0.25322E-01 | 0.13576E-01 | 0.18540E-01 |
| E | 0.12219E 01 | 0.95999E 00 | 0.76504E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.14673 | 0.11888 | 0.10094 | 0.09923 |
| V | 0.11093 | 0.10538 | 0.09649 | 0.07838 |
| W | 0.09505 | 0.09187 | 0.08569 | 0.06479 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.26775E-01 | 0.34342E-01 | 0.74042E-01 | 0.26080E-01 |
| U,W | -0.36202E-00 | -0.25495E-00 | -0.17463E-00 | -0.18818E-00 |
| U,T | -0.17802E-00 | -0.37933E-01 | -0.62317E-02 | -0.33760E-01 |
| V,W | -0.45536E-01 | -0.59834E-01 | -0.83079E-01 | -0.23796E-01 |
| V,T | 0.26033E-01 | 0.33939E-01 | 0.18008E-01 | 0.26198E-01 |
| W,T | 0.23433E-01 | -0.10342E-01 | -0.20291E-01 | 0.26238E-02 |
| WE | 0.26573E-00 | 0.17086E-00 | 0.92356E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.02886 | 0.04809 | 0.13336 | 0.05882 |
| U,W | -0.45535 | -0.40953 | -0.35418 | -0.51343 |
| U,T | -0.47052 | -0.26559 | -0.07018 | -0.33094 |
| V,W | -0.07576 | -0.10842 | -0.17628 | -0.08220 |
| V,T | 0.09101 | 0.26806 | 0.21216 | 0.32514 |
| W,T | 0.09561 | -0.09369 | -0.26918 | 0.03939 |

RUN NC 89A 91M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.55527 10E 00 | 0.49312 10E 00 | 0.88830 10E-01 | 0.47129 10E 00 | 0.84898 10E-01 | 0.75395 10E-01 |
| 0 | .133401 | -.354109 | -.070054 | -.176099 | .212198 | -.269003 |
| 1 | .138087 | -.325488 | -.049485 | -.160723 | .196694 | -.228054 |
| 2 | .131859 | -.272439 | -.024968 | -.135848 | .169760 | -.158715 |
| 3 | .116195 | -.216325 | -.013695 | -.096410 | .135194 | -.092620 |
| 4 | .097666 | -.163935 | -.014436 | -.059271 | .093942 | -.032062 |
| 5 | .078244 | -.115300 | -.021436 | -.031038 | .060813 | .013226 |
| 6 | .056129 | -.071795 | -.031678 | -.011749 | .034362 | .047186 |
| 7 | .031431 | -.028986 | -.038477 | -.007725 | .007868 | .066864 |
| 8 | .011348 | .008995 | -.038657 | .025710 | -.011112 | .072705 |
| 9 | -.003808 | .032610 | -.036469 | .039285 | -.029046 | .073382 |
| 10 | -.015060 | .047818 | -.026836 | .051220 | -.041979 | .069989 |
| 11 | -.024564 | .062215 | -.016541 | .054194 | -.048624 | .066847 |
| 12 | -.037489 | .078376 | -.009730 | .046177 | -.045151 | .055829 |
| 13 | -.045391 | .087119 | -.005746 | .038795 | -.035956 | .040663 |
| 14 | -.050837 | .094604 | -.006613 | .035479 | -.032728 | .031635 |
| 15 | -.050658 | .100282 | -.007929 | .028463 | -.038918 | .032296 |
| 16 | -.054570 | .100336 | -.007459 | .026813 | -.033738 | .037175 |
| 17 | -.059160 | .104439 | -.011834 | .027547 | -.041647 | .041005 |
| 18 | -.060251 | .101093 | -.016190 | .030099 | -.034213 | .041210 |
| 19 | -.063822 | .099115 | -.014363 | .037356 | -.031134 | .043706 |
| 20 | -.067805 | .098582 | -.010116 | .042741 | -.030903 | .044530 |
| 21 | -.072386 | .095738 | -.004929 | .043397 | -.030993 | .042730 |
| 22 | -.069753 | .088588 | .005319 | .048522 | -.036617 | .034496 |
| 23 | -.061962 | .082883 | .019594 | .058477 | -.046278 | .025365 |
| 24 | -.053350 | .076551 | .032960 | .064251 | -.053164 | .013056 |
| 25 | -.044509 | .063183 | .040340 | .062798 | -.058167 | .004316 |
| 26 | -.038917 | .047045 | .044729 | .062158 | -.060254 | -.000434 |
| 27 | -.035280 | .033115 | .042068 | .055875 | -.061843 | -.000224 |
| 28 | -.035320 | .027404 | .035484 | .042043 | -.054605 | .001179 |
| 29 | -.030120 | .036996 | .026981 | .022908 | -.040422 | .000968 |
| 30 | -.019873 | .028959 | .018798 | .006699 | -.029123 | -.002265 |
| 31 | -.013526 | .014685 | .014160 | -.005772 | -.024762 | -.009896 |
| 32 | -.013007 | .003685 | .013538 | -.014759 | -.020550 | .017361 |
| 33 | -.011539 | -.001874 | .007482 | -.025032 | -.014014 | -.029672 |
| 34 | -.003512 | -.005035 | .001350 | -.036668 | -.008160 | -.045367 |
| 35 | .006201 | -.007067 | .004526 | -.041089 | -.004834 | -.056615 |
| 36 | .007700 | -.019482 | .013895 | -.039339 | -.000036 | -.058683 |
| 37 | .011192 | -.032251 | .027003 | -.040650 | .006805 | -.057961 |
| 38 | .015959 | -.038500 | .036543 | -.043159 | .010772 | -.051935 |
| 39 | .020709 | -.037548 | .035203 | -.040672 | .018379 | -.043020 |
| 40 | .025899 | -.030580 | .026289 | -.032787 | .028663 | -.030382 |
| 41 | .028744 | -.023553 | .020980 | -.019118 | .036120 | -.017688 |
| 42 | .023343 | -.015121 | .020249 | -.007094 | .039952 | -.009851 |
| 43 | .019195 | -.006581 | .018467 | .003113 | .037719 | .001689 |
| 44 | .019785 | .002921 | .018904 | .007430 | .027291 | .006766 |
| 45 | .019536 | .011822 | .013335 | .007760 | .014957 | .007493 |
| 46 | .013308 | .017040 | .004530 | .002428 | .012934 | .004422 |
| 47 | .006218 | .020364 | -.000492 | -.006388 | .015566 | .004614 |
| 48 | .001014 | .027414 | -.001502 | -.017879 | .019935 | .005449 |
| 49 | .005321 | .029658 | -.007600 | -.024212 | .022909 | .005346 |
| 50 | .017430 | .025870 | -.014020 | -.029103 | .022872 | .007387 |
| 51 | .024997 | .015435 | -.016416 | -.035931 | .023749 | .014530 |
| 52 | .027707 | .004987 | -.014014 | -.038177 | .024915 | .019162 |
| 53 | .018661 | .001787 | -.011382 | -.041083 | .027366 | .025437 |
| 54 | .012756 | -.004132 | -.005665 | -.041848 | .025156 | .032973 |
| 55 | .010707 | -.011421 | .002436 | -.036485 | .015879 | .036945 |
| 56 | .012240 | -.018745 | .012981 | -.035006 | .008850 | .037849 |
| 57 | .014738 | -.027914 | .023595 | -.029037 | -.000243 | .031764 |
| 58 | .011467 | -.035694 | .035354 | -.022683 | -.013212 | .021871 |
| 59 | .000083 | -.039611 | .042078 | -.009512 | -.025892 | .012115 |
| 60 | -.014232 | -.038431 | .039518 | .007417 | -.031173 | .003434 |

RUN NO 89A 91M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.55527 10E 00 | 0.49312 10E 00 | 0.88830 10E-01 | 0.47129 10E 00 | 0.84898 10E-01 | 0.75395 10E-01 |
| 1 | -.009524 | -.002048 | .000493 | -.020866 | .029221 | -.031366 |
| 2 | -.016855 | -.005440 | .001399 | -.037248 | .045115 | -.027662 |
| 3 | -.020948 | -.010049 | -.006222 | -.050945 | .063117 | -.016897 |
| 4 | -.020210 | -.014872 | -.012387 | -.060147 | .074822 | -.011149 |
| 5 | -.017252 | -.021852 | -.013673 | -.062362 | .068177 | -.003827 |
| 6 | -.017189 | -.030805 | -.018376 | -.054247 | .058581 | .002016 |
| 7 | -.020380 | -.033568 | -.025960 | -.046756 | .055771 | .006583 |
| 8 | -.017075 | -.028231 | -.030804 | -.038609 | .052696 | .015740 |
| 9 | -.009950 | -.019558 | -.031394 | -.022535 | .043517 | .023873 |
| 10 | -.001320 | -.017941 | -.030195 | -.005259 | .026616 | .030369 |
| 11 | .006173 | -.021186 | -.030276 | .008938 | .012629 | .032107 |
| 12 | .015515 | -.019865 | -.033808 | .015815 | .007871 | .034053 |
| 13 | .019273 | -.011938 | -.038925 | .013761 | .007705 | .034606 |
| 14 | .021007 | -.000014 | -.050291 | .016131 | .006579 | .039219 |
| 15 | .018382 | .010896 | -.059162 | .020931 | .003870 | .044870 |
| 16 | .016866 | .014767 | -.064542 | .028830 | -.001449 | .048962 |
| 17 | .018726 | .013461 | -.063510 | .033023 | -.007481 | .044588 |
| 18 | .021444 | .011361 | -.05925^ | .037096 | -.005651 | .034117 |
| 19 | .017793 | .011730 | -.051410 | .037295 | -.001749 | .024655 |
| 20 | .009771 | .010884 | -.045881 | .034276 | .005657 | .019777 |
| 21 | -.002857 | .009500 | -.039415 | .024270 | .011262 | .016073 |
| 22 | -.014789 | .002853 | -.031654 | .006745 | .017899 | .011801 |
| 23 | -.026357 | -.002840 | -.021462 | -.005608 | .017843 | .004456 |
| 24 | -.035608 | .000489 | -.013484 | -.015811 | .009271 | -.003456 |
| 25 | -.041946 | .007202 | -.014796 | -.026124 | .004800 | -.011373 |
| 26 | -.044737 | .011087 | -.020405 | -.035577 | .004698 | -.008169 |
| 27 | -.047895 | .019012 | -.021075 | -.038905 | .006145 | -.000966 |
| 28 | -.048649 | .029771 | -.015993 | -.041709 | .007982 | .004805 |
| 29 | -.039179 | .032840 | -.014885 | -.042072 | .013417 | .013334 |
| 30 | -.021925 | .036850 | -.014724 | -.034473 | .014898 | .016506 |
| 31 | -.008776 | .030585 | -.009532 | -.023170 | .012622 | .011371 |
| 32 | -.002551 | .024524 | -.005603 | -.017341 | .007362 | .005109 |
| 33 | .005459 | .026349 | .001024 | -.009076 | .001090 | .000633 |
| 34 | .017076 | .022838 | .012959 | .001986 | -.000085 | -.002765 |
| 35 | .023253 | .010676 | .027261 | .016523 | .000182 | -.011769 |
| 36 | .026893 | -.005508 | .038099 | .027114 | .001913 | -.022323 |
| 37 | .027783 | -.015465 | .041639 | .033639 | .003065 | -.033184 |
| 38 | .025113 | -.018664 | .045463 | .034628 | -.003561 | -.037639 |
| 39 | .017084 | -.010967 | .048171 | .030795 | -.006495 | -.035246 |
| 40 | .016134 | -.003755 | .052075 | .030383 | -.004235 | -.030689 |
| 41 | .016411 | -.001059 | .052071 | .035093 | -.002504 | -.026516 |
| 42 | .016417 | -.006702 | .056767 | .038008 | -.006589 | -.028006 |
| 43 | .017028 | -.013344 | .059415 | .041728 | -.013587 | -.030519 |
| 44 | .023011 | -.014368 | .060931 | .050394 | -.018496 | -.033431 |
| 45 | .031147 | -.012120 | .057468 | .067963 | -.027585 | -.031670 |
| 46 | .039201 | -.012720 | .052000 | .076970 | -.037358 | -.029677 |
| 47 | .041696 | -.008910 | .043300 | .081048 | -.039337 | -.021968 |
| 48 | .041557 | -.003614 | .036916 | .078408 | -.032316 | -.013072 |
| 49 | .037024 | -.003554 | .038314 | .065812 | -.026035 | -.012287 |
| 50 | .029015 | -.011508 | .043676 | .049205 | -.022714 | -.019315 |
| 51 | .021356 | -.018755 | .045554 | .026864 | -.015960 | -.022898 |
| 52 | .017855 | -.022499 | .039677 | .007595 | -.012055 | -.017505 |
| 53 | .012799 | -.029813 | .033218 | -.003267 | -.013503 | -.012817 |
| 54 | .008495 | -.037764 | .026520 | -.007944 | -.014072 | -.009900 |
| 55 | .003085 | -.046816 | .022725 | -.014115 | -.015150 | -.007011 |
| 56 | -.001685 | -.048775 | .017949 | -.029697 | -.011820 | -.004344 |
| 57 | -.001515 | -.047100 | .013006 | -.042035 | -.002411 | -.004405 |
| 58 | -.003138 | -.048544 | .008850 | -.051177 | .006234 | -.000146 |
| 59 | -.008966 | -.047660 | .001633 | -.059059 | .013331 | .004322 |
| 60 | -.019207 | -.044101 | -.009779 | -.060442 | .007610 | .012302 |

RUN NO 89A 91M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.58099 10E 00 | 0.53069 10E 00 | 0.41854 10E 00 | 0.13582 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .867250 | .826716 | .795652 | .860844 |
| 2 | .694253 | .613367 | .537062 | .667280 |
| 3 | .550378 | .453839 | .336932 | .502436 |
| 4 | .431069 | .317348 | .183635 | .365133 |
| 5 | .321046 | .203480 | .074807 | .256579 |
| 6 | .232066 | .118870 | -.000315 | .168038 |
| 7 | .150093 | .051577 | -.060515 | .097155 |
| 8 | .075381 | -.015021 | -.105466 | .040137 |
| 9 | .017407 | -.070357 | -.131690 | -.004389 |
| 10 | -.036589 | -.115796 | -.141485 | -.043113 |
| 11 | -.083581 | -.150001 | -.143187 | -.075036 |
| 12 | -.122683 | -.168834 | -.157727 | -.099581 |
| 13 | -.153968 | -.181645 | -.167558 | -.118100 |
| 14 | -.178412 | -.184249 | -.176573 | -.133752 |
| 15 | -.194977 | -.186673 | -.172014 | -.153282 |
| 16 | -.217121 | -.182593 | -.162452 | -.173921 |
| 17 | -.241743 | -.183542 | -.155497 | -.189883 |
| 18 | -.264889 | -.187063 | -.152633 | -.199738 |
| 19 | -.282229 | -.187697 | -.154661 | -.210681 |
| 20 | -.294146 | -.178157 | -.163506 | -.215010 |
| 21 | -.295581 | -.166719 | -.167942 | -.216611 |
| 22 | -.295286 | -.168306 | -.165466 | -.214323 |
| 23 | -.298333 | -.190120 | -.150236 | -.210668 |
| 24 | -.297553 | -.201219 | -.129859 | -.208313 |
| 25 | -.287759 | -.210732 | -.118687 | -.200631 |
| 26 | -.270777 | -.214866 | -.120165 | -.190647 |
| 27 | -.252314 | -.206398 | -.118329 | -.184124 |
| 28 | -.234520 | -.186494 | -.115704 | -.181523 |
| 29 | -.213771 | -.167888 | -.100241 | -.175775 |
| 30 | -.182653 | -.146685 | -.061725 | -.158604 |
| 31 | -.136266 | -.119531 | -.007848 | -.133693 |
| 32 | -.098448 | -.093764 | .037926 | -.103918 |
| 33 | -.067675 | -.072094 | .073276 | -.074856 |
| 34 | -.037329 | -.044538 | .100393 | -.046446 |
| 35 | -.012968 | -.014308 | .122449 | -.025622 |
| 36 | .006830 | .014037 | .145497 | -.014664 |
| 37 | .019601 | .041199 | .152538 | -.004537 |
| 38 | .033596 | .066826 | .143593 | .006341 |
| 39 | .046751 | .096064 | .119669 | .021093 |
| 40 | .055051 | .116224 | .082006 | .035650 |
| 41 | .053787 | .112485 | .049449 | .050588 |
| 42 | .049298 | .097129 | .017405 | .060745 |
| 43 | .045211 | .077105 | .000211 | .062008 |
| 44 | .044446 | .068379 | -.002628 | .062198 |
| 45 | .052900 | .060878 | .000719 | .060418 |
| 46 | .067385 | .057050 | -.000118 | .054408 |
| 47 | .084510 | .044425 | -.005242 | .049275 |
| 48 | .091590 | .038364 | -.010045 | .040719 |
| 49 | .097394 | .042337 | -.013061 | .029277 |
| 50 | .094067 | .053338 | -.009366 | .021604 |
| 51 | .092937 | .065055 | -.013752 | .008927 |
| 52 | .089287 | .071496 | -.013187 | -.002462 |
| 53 | .081732 | .079458 | -.020845 | -.003899 |
| 54 | .071453 | .078459 | -.023660 | .000969 |
| 55 | .061914 | .068152 | -.020910 | .010798 |
| 56 | .051610 | .054928 | -.016405 | .018592 |
| 57 | .045737 | .041159 | -.020044 | .025100 |
| 58 | .036641 | .030405 | -.033690 | .029644 |
| 59 | .026890 | .007563 | -.033131 | .028077 |
| 60 | .022578 | -.011229 | -.032248 | .020422 |

RUN NO 89A 91M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 0 | .001623 | -.013265 | -.027194 | .001436 | .019569 | .000062 |
| 1 | .089434 | -.166828 | -.177041 | -.032709 | .182587 | -.006975 |
| 2 | .173583 | -.257178 | -.132884 | -.102716 | .279075 | -.089374 |
| 3 | .218111 | -.342270 | -.047572 | -.157341 | .321196 | -.234816 |
| 4 | .143122 | -.275692 | .013285 | -.111088 | .215046 | -.245582 |
| 5 | .072647 | -.169427 | .016856 | -.060405 | .178270 | -.181814 |
| 6 | .048409 | -.130514 | -.006136 | -.083839 | .191577 | -.193424 |
| 7-8 | .0284 1 | -.083497 | -.016596 | -.080062 | .122762 | -.178212 |
| 9-11 | .005565 | -.043551 | .008776 | -.019011 | .041495 | -.118007 |
| 12-15 | -.000378 | -.018136 | -.032343 | -.010934 | .011842 | -.043357 |
| 16-20 | -.002899 | -.009131 | -.020501 | -.008025 | .014668 | -.023291 |
| 21-27 | -.000283 | -.007071 | -.010308 | .000638 | -.001211 | -.011071 |
| 28-36 | -.002528 | -.001666 | -.005086 | .000485 | .000419 | -.005668 |
| 37-47 | -.001046 | -.001522 | -.002781 | -.001196 | .003438 | -.004382 |
| 48-60 | -.001033 | -.000652 | -.001980 | -.001379 | .000494 | -.001551 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 1 | -.171591 | .168772 | -.175769 | .004327 | .094724 | .078872 |
| 2 | -.152513 | -.107172 | -.210214 | -.020247 | .097200 | .104430 |
| 3 | .259478 | -.475533 | -.082679 | .000565 | .084529 | .052581 |
| 4 | .077706 | -.383328 | .026987 | -.042048 | .105323 | -.010151 |
| 5 | -.578858 | -.167446 | .017659 | -.101609 | .122130 | -.029570 |
| 6 | -.671518 | -.211867 | .031451 | -.075056 | .104765 | -.061114 |
| 7-8 | -.033636 | -.062215 | .002373 | -.018805 | .068728 | -.037762 |
| 9-11 | -.051604 | .082126 | -.003891 | -.018043 | .021894 | -.016355 |
| 12-15 | .009344 | .028706 | .011813 | .003458 | .007414 | -.015008 |
| 16-20 | -.052601 | .030771 | -.003338 | -.002390 | .008486 | -.010666 |
| 21-27 | .001108 | -.025723 | .004962 | .001852 | -.006667 | -.009611 |
| 28-36 | .009458 | .010587 | -.000424 | -.001555 | .004585 | -.006461 |
| 37-47 | -.003122 | -.002691 | -.002114 | .000175 | .003236 | -.003298 |
| 48-60 | -.002760 | -.001038 | -.000109 | -.000423 | .000164* | -.000645 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .004329 | .025604 | .013852 | .018198 |
| 1 | .067017 | .422393 | .178850 | .159644 |
| 2 | .101722 | .698540 | .352876 | .205430 |
| 3 | .110541 | .819638 | .548546 | .218347 |
| 4 | .067237 | .559233 | .451206 | .143080 |
| 5 | .038086 | .423540 | .296277 | .098096 |
| 6 | .033191 | .424635 | .315686 | .088088 |
| 7-8 | .025810 | .265447 | .259538 | .064883 |
| 9-11 | .013886 | .148482 | .167632 | .042390 |
| 12-15 | .008234 | .097607 | .102446 | .022602 |
| 16-20 | .004960 | .063145 | .058853 | .013534 |
| 21-27 | .003388 | .036690 | .036811 | .008018 |
| 28-36 | .001995 | .027463 | .022225 | .004484 |
| 37-47 | .001245 | .016453 | .015106 | .002958 |
| 48-60 | .000852 | .009912 | .008811 | .001801 |

RUN NO 89A 91M 6-18-63 1336-1437(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.44348 10E 00 | 0.36660 10E 00 | 0.10203 10E 00 | 0.28944 10E 00 | 0.80557 10E-01 | 0.66593 10E-01 |
| 0 | .058807 | -.513297 | -.330880 | -.082214 | .325214 | .039400 |
| 1 | -.077011 | -.213021 | -.296975 | .104260 | .194876 | .184482 |
| 2 | -.104791 | -.112250 | -.231197 | .136675 | .130410 | .146874 |
| 3 | -.046554 | -.135461 | -.163143 | .068306 | .065466 | .126486 |
| 4 | -.039096 | -.074643 | -.1 1717 | .027431 | .064715 | .082963 |
| 5 | -.020745 | -.021066 | -.078801 | .024396 | .036424 | .070111 |
| 6 | -.017801 | -.029461 | -.027465 | .050297 | -.001497 | .078742 |
| 7 | -.00718 | .037028 | -.005352 | .065818 | -.033546 | .041662 |
| 8 | -.010425 | .117792 | .061785 | .059310 | -.034565 | -.013908 |
| 9 | -.060729 | .110307 | .121014 | -.039023 | -.008881 | -.033111 |
| 10 | -.034279 | .119448 | .194095 | -.004557 | -.051909 | -.040493 |
| 11 | .002859 | .166146 | .177339 | -.069114 | -.070829 | -.078017 |
| 12 | .050000 | .142008 | .151142 | -.061397 | -.143111 | -.103510 |
| 13 | .048433 | .133649 | .123149 | -.069867 | -.143202 | -.106747 |
| 14 | .058183 | .103789 | .159841 | -.042036 | -.151185 | -.090558 |
| 15 | .115355 | .013487 | .186432 | -.087043 | -.150077 | -.106304 |
| 16 | .112839 | .007688 | .148883 | -.118218 | -.124957 | -.119081 |
| 17 | .085064 | .042462 | .121739 | -.090391 | -.044764 | -.125693 |
| 18 | .066729 | -.014671 | .048390 | -.054675 | -.025748 | -.085898 |
| 19 | .031194 | .021711 | .033237 | .027977 | -.048505 | -.043668 |
| 20 | .029492 | .015441 | .027499 | -.052577 | .008510 | -.078274 |
| 21 | .014061 | .020629 | .006228 | -.093429 | .048470 | -.046545 |
| 22 | -.033445 | .017289 | -.004472 | -.061346 | .099081 | -.069262 |
| 23 | -.086189 | -.017216 | -.063598 | .031899 | .066298 | -.036396 |
| 24 | -.099643 | .025914 | -.111955 | .061505 | .044978 | .000929 |
| 25 | -.091369 | .044030 | -.103552 | -.016906 | .063119 | .030493 |
| 26 | -.030738 | .025069 | -.123604 | .071047 | .081704 | .067041 |
| 27 | -.006958 | -.071909 | -.155267 | .028981 | .039265 | .135602 |
| 28 | .031645 | -.006583 | -.150611 | .039769 | .018285 | .117265 |
| 29 | -.035266 | .049235 | -.114228 | .058079 | .006763 | .096639 |
| 30 | .013420 | -.056682 | -.103567 | .081651 | .012468 | .104542 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 |
| 0 | -.015693 | -.016185 | -.005939 | .008273 | .028213 | .041069 |
| 1 | -.137919 | -.214242 | -.083540 | .114407 | .413556 | .453859 |
| 2 | -.132901 | -.275790 | -.107291 | .108018 | .556488 | .431388 |
| 3 | -.023098 | -.281305 | -.083804 | .034424 | .420717 | .208111 |
| 4 | .052939 | -.159207 | -.028706 | -.024580 | .092931 | .010781 |
| 5 | -.026003 | -.042397 | -.010911 | -.017337 | .105167 | -.017991 |
| 6 | -.044687 | -.024574 | -.006099 | -.000461 | .194015 | -.011717 |
| 7 | -.005095 | -.058669 | -.005608 | .010668 | .153222 | -.001772 |
| 8 | .028252 | -.067887 | -.008757 | .007739 | .069352 | -.004936 |
| 9-11 | .042298 | -.055397 | -.009849 | -.013570 | .057049 | -.008972 |
| 12-14 | .016923 | -.051216 | -.000230 | -.041655 | .096310 | -.042278 |
| 15-21 | .043780 | -.070154 | -.000287 | -.037088 | .027776 | -.041387 |
| 22-30 | .028399 | -.043636 | -.000700 | -.022154 | .050166 | -.071223 |

RUN NO 89A 91M 6-18-63 1336-1437(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|
| | 0.44348 10E 00 | 0.36660 10E 00 | 0.10203 10E 00 | 0.28944 10E 00 | .80557 10E-01 | 0.66593 10E-01 |
| 1 | .014633 | .010811 | -.050537 | .002587 | .054653 | .064087 |
| 2 | .061570 | .035670 | -.056183 | .091089 | .050944 | .065651 |
| 3 | .044396 | .024885 | -.018084 | .035009 | .073875 | .052825 |
| 4 | .103106 | .053837 | -.011174 | .091905 | .069536 | .056350 |
| 5 | .094756 | .045550 | -.007498 | .090929 | .055364 | .049055 |
| 6 | .063151 | .053273 | -.037055 | -.051949 | .081133 | .083739 |
| 7 | .016356 | .123322 | -.065872 | -.059664 | .071688 | .107340 |
| 8 | .056216 | .116296 | -.030616 | .016513 | .086294 | .086493 |
| 9 | .022128 | .066778 | -.006522 | .050506 | .075173 | .021916 |
| 10 | .021380 | .050815 | -.031708 | .044435 | .011885 | .077193 |
| 11 | -.007061 | .071809 | -.031968 | -.006706 | .038605 | .053635 |
| 12 | .008623 | .045604 | .008534 | .040702 | .006413 | .008659 |
| 13 | .017150 | .031419 | .051024 | .065948 | .036946 | -.059379 |
| 14 | .104668 | .032533 | .105190 | .051336 | .086632 | -.093360 |
| 15 | .064081 | .009599 | .080676 | -.011084 | .055412 | -.080521 |
| 16 | .029096 | -.013577 | .060265 | -.057757 | .017660 | -.021843 |
| 17 | -.058139 | .008349 | .022996 | -.005711 | -.065947 | -.028049 |
| 18 | -.058644 | -.060274 | .038259 | -.005230 | -.061481 | -.059980 |
| 19 | -.056866 | -.007479 | .040373 | -.044537 | -.064750 | -.060410 |
| 20 | .058826 | -.051110 | .053802 | .073918 | -.059047 | -.059929 |
| 21 | .024451 | -.055525 | .016132 | .063468 | -.059789 | -.051709 |
| 22 | -.053299 | -.099082 | -.001255 | .022559 | -.067616 | -.058844 |
| 23 | -.072732 | -.056338 | .027028 | -.050095 | -.067603 | -.052639 |
| 24 | -.055903 | -.090676 | .018788 | -.061398 | -.087327 | -.007871 |
| 25 | -.015594 | -.112486 | -.040683 | -.056278 | -.075188 | .010319 |
| 26 | -.036871 | -.049401 | -.100002 | -.081534 | -.070828 | .066523 |
| 27 | -.078916 | -.041232 | -.079780 | -.106314 | -.064200 | .045383 |
| 28 | -.129397 | .014681 | -.073261 | -.077435 | -.071944 | .037477 |
| 29 | -.027835 | -.007346 | -.087017 | -.017421 | .035306 | .043550 |
| 30 | -.030190 | .016623 | -.121715 | -.037372 | .052257 | .078648 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .132381 | .140364 | .069495 | -.554097 | .273120 | .095104 |
| 2 | .119819 | .142067 | -.146228 | .423319 | .308190 | .234409 |
| 3 | .078050 | .061588 | -.231049 | .259248 | .160409 | .233572 |
| 4 | .064681 | -.004765 | -.048776 | .232237 | .059530 | .061486 |
| 5 | .072729 | -.015412 | .053675 | .323008 | .091626 | -.024678 |
| 6 | .042636 | -.021335 | .009005 | .641497 | .041706 | -.022061 |
| 7 | -.021757 | -.009384 | -.091002 | .501747 | -.036307 | .048252 |
| 8 | -.034893 | .000480 | -.090688 | .043831 | .002299 | .071932 |
| 9-11 | -.009107 | .019445 | -.061367 | -.152296 | .056575 | .029820 |
| 12-14 | .001192 | -.011242 | -.062700 | -.165884 | .002586 | .037533 |
| 15-21 | .002055 | .002768 | -.010941 | .034411 | .007908 | .013565 |
| 22-30 | -.023176 | -.007495 | .016339 | -.213713 | .020602 | -.008422 |

RUN NO 89A 914 6-18-63 1336-1437(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.56170 10E 00 | 0.35014 10E 00 | 0.23927 10E 00 | 0.18534 10F-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .447773 | .244280 | .134937 | .674432 |
| 2 | .173943 | .039937 | .042166 | .438382 |
| 3 | .138001 | -.052440 | .087990 | .285714 |
| 4 | .137473 | .026446 | .119347 | .194259 |
| 5 | .106964 | .008497 | -.014387 | .078901 |
| 6 | -.021480 | -.034583 | -.031782 | -.065336 |
| 7 | -.101366 | -.075901 | .008304 | -.167514 |
| 8 | -.235356 | .027749 | -.058538 | -.231101 |
| 9 | -.296828 | -.088473 | .009866 | -.299447 |
| 10 | -.268815 | -.052619 | -.098626 | -.402978 |
| 11 | -.256719 | -.054537 | -.149178 | -.403243 |
| 12 | -.191266 | -.148004 | -.139686 | -.365556 |
| 13 | -.156428 | -.089683 | -.157637 | -.342997 |
| 14 | -.124030 | -.192064 | -.259819 | -.316920 |
| 15 | -.049088 | -.072522 | -.050663 | -.231514 |
| 16 | .005251 | -.047102 | -.005222 | -.123903 |
| 17 | -.004853 | -.062927 | -.100950 | -.087715 |
| 18 | -.041608 | -.028322 | -.002294 | -.020840 |
| 19 | -.022976 | -.014720 | -.124284 | .075124 |
| 20 | .096453 | .015305 | .044349 | .152717 |
| 21 | .052214 | .042086 | -.044998 | .149000 |
| 22 | -.075720 | -.069629 | -.036328 | .136990 |
| 23 | -.050186 | -.110686 | -.068066 | .197860 |
| 24 | -.021545 | -.061259 | -.008623 | .227254 |
| 25 | .027107 | -.027922 | .069132 | .201661 |
| 26 | -.026987 | .056014 | -.060275 | .175726 |
| 27 | .027486 | .007764 | .024727 | .102578 |
| 28 | -.054021 | .082560 | .069294 | .094581 |
| 29 | .005341 | .036880 | .011169 | .055460 |
| 30 | .106782 | .042880 | .049247 | .022181 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .045618 | .020072 | .014011 | .016925 |
| 1 | .527651 | .229994 | .181078 | .235064 |
| 2 | .718998 | .261242 | .207356 | .380775 |
| 3 | .823602 | .239206 | .171433 | .401801 |
| 4 | .539401 | .156918 | .084574 | .189764 |
| 5 | .195692 | .132702 | .051939 | .077907 |
| 6 | .077588 | .184167 | .081998 | .066280 |
| 7 | .109530 | .188602 | .107550 | .063805 |
| 8 | .184856 | .150802 | .082146 | .058357 |
| 9-11 | .258538 | .154627 | .061039 | .046854 |
| 12-14 | .209224 | .159008 | .094214 | .042347 |
| 15-21 | .157781 | .110164 | .115799 | .025769 |
| 22-30 | .130397 | .146536 | .109581 | .022862 |

RUN NO 89A 46M 6-18-63 1336-1437(EST)
 RUN NO 89A 91M 6-18-63 1336-1437(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .220359 | .375105 | .429022 | .284506 |
| 1 | .26786 | .695128 | .574833 | .273075 |
| 2 | .207869 | .665150 | .52866 | .225042 |
| 3 | .187088 | .608149 | .435172 | .161685 |
| 4 | .190459 | .536662 | .335751 | .116547 |
| 5 | .206716 | .474777 | .263316 | .168917 |
| 6 | .222047 | .469364 | .183184 | .158464 |
| 7-8 | .119031 | .357166 | .216276 | .185244 |
| 9-11 | .109856 | .132717 | .183487 | .123129 |
| 12-15 | .180981 | .076132 | .145426 | .080529 |
| 16-20 | .101501 | .100705 | .211699 | .081275 |
| 21-27 | .118458 | .078530 | .137025 | .105902 |
| 28-36 | .107461 | .065054 | .150873 | .183046 |
| 37-47 | .119819 | .127191 | .089315 | .115962 |
| 48-60 | .088809 | .091473 | .079587 | .100900 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .628643 | .748273 | .849545 | .935677 |
| 1 | .744609 | .552958 | .910503 | .738064 |
| 2 | .679772 | .530272 | .798777 | .650684 |
| 3 | .426442 | .380290 | .684016 | .522344 |
| 4 | .367125 | .338592 | .629053 | .174359 |
| 5 | .327717 | .563519 | .391234 | .045997 |
| 6 | .149316 | .694076 | .398015 | .419417 |
| 7 | .212769 | .629482 | .512231 | .353329 |
| 8 | .249194 | .636042 | .492619 | .270920 |
| 9-11 | .204972 | .769768 | .646482 | .459744 |
| 12-14 | .155497 | .634469 | .596627 | .138077 |
| 15-21 | .237329 | .505605 | .416262 | .286549 |
| 22-30 | .285295 | .410224 | .376141 | .285698 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)

GROSS STATISTICS

| | | |
|------------------|------------------------|------------------|
| I CU UNSTABLE | WIND SPEED 4.16 M/SEC | SIGMA A 16.3 DEG |
| | WIND DIRECTION 226 DEG | SIGMA E 12.7 DEG |
| | SOLAR RAD. 0.88 LY/MIN | |

| | | | | |
|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|
| WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN | 301 PT RUN MEAN |
| | | | 10 PT BLOCK AVG | |

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.22057E 01 | 0.19185E 01 | 0.14734E 01 | 0.12076E 01 |
| V | 0.11835E 01 | 0.10780E 01 | 0.93783E 00 | 0.54581E 00 |
| W | 0.58670E 00 | 0.58241E 00 | 0.52347E 00 | 0.20321E-00 |
| T | 0.13410E-00 | 0.68054E-01 | 0.37855E-01 | 0.49438E-01 |
| E | 0.19880E 01 | 0.17895E 01 | 0.14674E 01 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.35701 | 0.33296 | 0.29179 | 0.26416 |
| V | 0.26151 | 0.24958 | 0.23279 | 0.17759 |
| W | 0.18413 | 0.18345 | 0.17392 | 0.10836 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.94963E-01 | 0.15923E-00 | 0.10702E-00 | 0.15116E-00 |
| U,W | -0.51538E 00 | -0.44000E-00 | -0.38261E-00 | -0.24939E-00 |
| U,T | -0.35819E-00 | -0.26692E-00 | -0.17653E-00 | -0.18853E-00 |
| V,W | 0.59482E-01 | 0.52483E-01 | 0.51928E-01 | 0.21531E-01 |
| V,T | 0.53947E-01 | -0.23134E-02 | -0.18123E-02 | -0.97265E-02 |
| W,T | 0.10274E-00 | 0.73412E-01 | 0.62156E-01 | 0.40185E-01 |
| WE | 0.48012E-01 | 0.10018E-00 | 0.12391E-00 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.05878 | 0.11072 | 0.09104 | 0.18620 |
| U,W | -0.45304 | -0.41626 | -0.43566 | -0.50345 |
| U,T | -0.65859 | -0.73873 | -0.74747 | -0.77160 |
| V,W | 0.07138 | 0.06624 | 0.07411 | 0.06465 |
| V,T | 0.13542 | 0.00854 | -0.00962 | -0.05921 |
| W,T | 0.36628 | 0.36875 | 0.44155 | 0.40092 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.11754 10E 01 | 0.87824 10E 00 | 0.23617 10E 00 | 0.70067 10E 00 | 0.18842 10E 00 | 0.14079 10E 00 |
| 0 | .091202 | -.435749 | -.747475 | .074049 | -.009549 | .441527 |
| 1 | .085842 | -.399798 | -.677322 | .066325 | -.023525 | .389369 |
| 2 | .078137 | -.322940 | -.553916 | .050238 | -.042035 | .299665 |
| 3 | .078691 | -.240752 | -.43777 | .035167 | -.059529 | .214883 |
| 4 | .085033 | -.176835 | -.34101 | .033696 | -.069708 | .149570 |
| 5 | .085605 | -.127076 | -.26144 | .027122 | -.072803 | .098967 |
| 6 | .084315 | -.076267 | -.197981 | .009265 | -.070015 | .053111 |
| 7 | .073570 | -.030436 | -.135162 | -.010115 | -.057018 | .016560 |
| 8 | .066984 | .010187 | -.077064 | -.012477 | -.043370 | -.015681 |
| 9 | .039937 | .031989 | -.027910 | -.014377 | -.031222 | -.029154 |
| 10 | .026486 | .047501 | .011712 | -.014651 | -.019695 | -.036254 |
| 11 | .017476 | .061225 | .035577 | -.021512 | -.009257 | -.042562 |
| 12 | .014977 | .067828 | .053046 | -.021561 | .001050 | -.044319 |
| 13 | .011404 | .077653 | .071715 | -.022852 | .004696 | -.043316 |
| 14 | .001400 | .078942 | .091318 | -.028949 | .001515 | -.044442 |
| 15 | -.008856 | .081352 | .115440 | -.040190 | -.000113 | -.053556 |
| 16 | -.016540 | .090213 | .138020 | -.056714 | .005218 | -.068277 |
| 17 | -.025982 | .093409 | .158542 | -.060508 | .013269 | -.081347 |
| 18 | -.027396 | .096552 | .178328 | -.059716 | .017438 | -.092544 |
| 19 | -.029603 | .101691 | .197064 | -.057965 | .019562 | -.100689 |
| 20 | -.031059 | .108854 | .215229 | -.053070 | .017397 | -.107656 |
| 21 | -.033841 | .118424 | .226492 | -.049512 | .014410 | -.114388 |
| 22 | -.045509 | .129395 | .231665 | -.047255 | .027238 | -.127290 |
| 23 | -.057415 | .136644 | .234298 | -.036426 | .044557 | -.140735 |
| 24 | -.064446 | .133908 | .227285 | -.019984 | .059025 | -.137143 |
| 25 | -.071352 | .118361 | .215615 | -.005987 | .069171 | -.116257 |
| 26 | -.080685 | .097616 | .201325 | -.004838 | .073433 | -.096045 |
| 27 | -.084015 | .081890 | .184569 | -.001798 | .071445 | -.079305 |
| 28 | -.087569 | .061068 | .170294 | .006553 | .067614 | -.062453 |
| 29 | -.093940 | .043215 | .151108 | .019126 | .070281 | -.044634 |
| 30 | -.091602 | .018642 | .123986 | .033517 | .068083 | -.028166 |
| 31 | -.081870 | -.000716 | .097033 | .042064 | .059739 | -.004848 |
| 32 | -.075222 | -.012549 | .074847 | .041550 | .047341 | .013382 |
| 33 | -.070299 | -.018885 | .061559 | .043030 | .040311 | .020204 |
| 34 | -.065284 | -.019858 | .055337 | .047719 | .041050 | .013446 |
| 35 | -.066916 | -.020183 | .054375 | .047383 | .046054 | .010090 |
| 36 | -.069407 | -.020047 | .047101 | .044476 | .045383 | .006971 |
| 37 | -.059108 | -.011985 | .039937 | .047531 | .037167 | .001818 |
| 38 | -.042949 | .002931 | .038703 | .050852 | .023327 | -.013667 |
| 39 | -.033092 | .022136 | .042554 | .051423 | .014178 | -.029631 |
| 40 | -.032168 | .036213 | .044208 | .054483 | .009717 | -.038557 |
| 41 | -.027065 | .038661 | .042116 | .052567 | .007721 | -.041513 |
| 42 | -.020900 | .032412 | .033638 | .047894 | .002838 | -.042304 |
| 43 | -.001183 | .021414 | .028285 | .035829 | -.008448 | -.030671 |
| 44 | .025455 | .001338 | .018830 | .023163 | -.026334 | -.007666 |
| 45 | .037314 | -.011834 | .000978 | .018609 | -.036330 | .012736 |
| 46 | .040059 | -.023072 | -.024017 | .014936 | -.040986 | .026411 |
| 47 | .038301 | -.027279 | -.045826 | .013978 | -.039225 | .042000 |
| 48 | .031019 | -.030596 | -.062280 | .015042 | -.028683 | .046815 |
| 49 | .026552 | -.030995 | -.072233 | .003171 | -.022889 | .045164 |
| 50 | .032607 | -.019752 | -.075967 | -.014629 | -.026357 | .039818 |
| 51 | .049430 | -.005264 | -.069533 | -.014884 | -.033358 | .030972 |
| 52 | .066155 | .004196 | -.058997 | -.016046 | -.043246 | .016777 |
| 53 | .079308 | .007214 | -.057353 | -.019633 | -.050977 | .003509 |
| 54 | .085379 | .008428 | -.060320 | -.016221 | -.053630 | -.001542 |
| 55 | .082490 | .003353 | -.066310 | -.017040 | -.044179 | .008584 |
| 56 | .073638 | -.005007 | -.073348 | -.020943 | -.037713 | .023113 |
| 57 | .060351 | -.021821 | -.073331 | -.019529 | -.037278 | .036017 |
| 58 | .047275 | -.024111 | -.067070 | -.016165 | -.037052 | .039922 |
| 59 | .039839 | -.025299 | -.059555 | -.014807 | -.033945 | .037832 |
| 60 | .033806 | -.025746 | -.052371 | -.009983 | -.027590 | .040228 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.11754 10E 01 | 0.87824 10E 00 | 0.23617 10E 00 | 0.70067 10E 00 | 0.18842 10E 00 | 0.14079 10E 00 |
| 1 | .023248 | -.033476 | -.059056 | .048543 | .042804 | -.001392 |
| 2 | .046419 | -.048183 | -.089051 | .075814 | .070644 | .005432 |
| 3 | .055818 | -.052761 | -.103555 | .088021 | .081399 | .012061 |
| 4 | .053410 | -.048967 | -.112709 | .081648 | .076998 | .023476 |
| 5 | .046969 | -.049225 | -.124008 | .062821 | .069878 | .032006 |
| 6 | .037212 | -.049077 | -.136611 | .045727 | .059995 | .040867 |
| 7 | .027315 | -.042647 | -.150261 | .024766 | .043387 | .054542 |
| 8 | .024885 | -.034406 | -.158769 | .000481 | .023648 | .066841 |
| 9 | .022077 | -.028470 | -.156631 | -.023883 | .009052 | .073545 |
| 10 | .017808 | -.014090 | -.147574 | -.038469 | .003653 | .073578 |
| 11 | .010678 | -.003605 | -.136469 | -.042346 | .000096 | .062332 |
| 12 | -.003836 | -.001849 | -.129318 | -.039421 | -.008906 | .048598 |
| 13 | -.016593 | .000994 | -.123912 | -.034460 | -.014389 | .046170 |
| 14 | -.025642 | -.000629 | -.119805 | -.030042 | -.015392 | .041964 |
| 15 | -.022612 | -.003644 | -.110569 | -.028308 | -.017010 | .043894 |
| 16 | -.014936 | -.010135 | -.099630 | -.030388 | -.016058 | .046515 |
| 17 | -.003545 | -.010112 | -.082882 | -.028914 | -.011013 | .046495 |
| 18 | .004888 | -.010177 | -.068488 | -.028975 | -.005369 | .041333 |
| 19 | .001977 | -.017940 | -.057564 | -.027634 | -.005718 | .027633 |
| 20 | .003157 | -.021458 | -.047584 | -.024876 | -.003484 | .011859 |
| 21 | .006709 | -.025525 | -.036268 | -.016846 | -.002015 | .001610 |
| 22 | .007083 | -.028282 | -.022060 | -.009789 | -.002856 | -.005906 |
| 23 | .004096 | -.020800 | -.007996 | -.015177 | -.008294 | -.001991 |
| 24 | .002374 | -.001052 | .002992 | -.025989 | -.015054 | -.003779 |
| 25 | .000850 | .012565 | .011908 | -.040891 | -.025436 | -.006341 |
| 26 | -.003443 | .022372 | .018857 | -.052534 | -.033949 | -.006279 |
| 27 | -.005625 | .030243 | .021937 | -.047489 | -.037710 | -.014355 |
| 28 | -.014641 | .029054 | .023747 | -.038879 | -.043148 | -.014213 |
| 29 | -.021217 | .020586 | .023590 | -.032230 | -.047489 | -.013671 |
| 30 | -.022761 | .013493 | .023471 | -.020381 | -.043066 | -.017191 |
| 31 | -.024753 | .009670 | .025767 | -.005472 | -.033480 | -.018727 |
| 32 | -.019277 | .009284 | .026256 | .009933 | -.024901 | -.015840 |
| 33 | -.007634 | .009333 | .024651 | .013073 | -.015257 | -.001960 |
| 34 | .001350 | .011267 | .027962 | .017544 | -.005565 | .012087 |
| 35 | .006491 | .013570 | .032731 | .018109 | -.000874 | .013446 |
| 36 | .007662 | .006596 | .034817 | .018096 | .003092 | .009388 |
| 37 | .017992 | .006035 | .035354 | .027506 | .016039 | -.000381 |
| 38 | .029043 | .002083 | .034434 | .038002 | .034040 | -.005253 |
| 39 | .030170 | .005022 | .033455 | .045537 | .043256 | -.004768 |
| 40 | .021596 | .012223 | .031697 | .045134 | .045075 | -.008273 |
| 41 | .007150 | .013960 | .031639 | .036479 | .041687 | -.010399 |
| 42 | -.006557 | .012586 | .028587 | .023812 | .034225 | -.010415 |
| 43 | -.016804 | .010657 | .024750 | .012902 | .025441 | -.011733 |
| 44 | -.020842 | .011341 | .025523 | .010031 | .022197 | -.013238 |
| 45 | -.018560 | .012427 | .025345 | .016855 | .022995 | -.012796 |
| 46 | -.013336 | .014106 | .028613 | .027045 | .027744 | -.007831 |
| 47 | -.004978 | .010569 | .027889 | .037019 | .036886 | .002647 |
| 48 | .007029 | .012826 | .025083 | .036153 | .045546 | .015611 |
| 49 | .016151 | .010867 | .022045 | .034620 | .051026 | .020989 |
| 50 | .020405 | .009994 | .022898 | .036008 | .061859 | .020991 |
| 51 | .018743 | .012142 | .025635 | .038220 | .065802 | .015732 |
| 52 | .014252 | .015579 | .028242 | .038743 | .052974 | .010469 |
| 53 | .007464 | .021430 | .027526 | .031524 | .040327 | .009761 |
| 54 | .001421 | .025611 | .026453 | .008584 | .024250 | .014962 |
| 55 | -.005798 | .031895 | .025102 | -.023321 | .003617 | .024214 |
| 56 | -.010462 | .025447 | .018655 | -.054785 | -.008401 | .024899 |
| 57 | -.012543 | .019370 | .010533 | -.060374 | -.017054 | .022966 |
| 58 | -.014992 | .014374 | -.003474 | -.045314 | -.024144 | .020068 |
| 59 | -.013914 | .008580 | -.010965 | -.040370 | -.029000 | .010306 |
| 60 | -.014729 | -.004281 | -.017609 | -.032944 | -.037075 | -.007370 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.14732 10E 01 | 0.93774 10E 00 | 0.52354 10E 00 | 0.37860 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .852826 | .796973 | .684727 | .862219 |
| 2 | .670459 | .560746 | .373155 | .671648 |
| 3 | .521442 | .390781 | .175695 | .516078 |
| 4 | .401498 | .261393 | .064455 | .399931 |
| 5 | .306466 | .172080 | .016968 | .309597 |
| 6 | .224010 | .103733 | -.031554 | .232342 |
| 7 | .144359 | .036649 | -.073394 | .163243 |
| 8 | .075905 | -.024244 | -.091261 | .096056 |
| 9 | .016413 | -.065211 | -.097369 | .038359 |
| 10 | -.035957 | -.099118 | -.084804 | -.008314 |
| 11 | -.070705 | -.127136 | -.077733 | -.036275 |
| 12 | -.091078 | -.149013 | -.077569 | -.057054 |
| 13 | -.108927 | -.159388 | -.058887 | -.076242 |
| 14 | -.134695 | -.176079 | -.034821 | -.096840 |
| 15 | -.166831 | -.190686 | -.020959 | -.124491 |
| 16 | -.195514 | -.198247 | -.037270 | -.147938 |
| 17 | -.217524 | -.195039 | -.070494 | -.172215 |
| 18 | -.236736 | -.186079 | -.090617 | -.197613 |
| 19 | -.253877 | -.181078 | -.096677 | -.222682 |
| 20 | -.271323 | -.190896 | -.093987 | -.246749 |
| 21 | -.285795 | -.210929 | -.107037 | -.262325 |
| 22 | -.295153 | -.222049 | -.137053 | -.267164 |
| 23 | -.293312 | -.213675 | -.162156 | -.270050 |
| 24 | -.282561 | -.196374 | -.168840 | -.260727 |
| 25 | -.264451 | -.173755 | -.158474 | -.249139 |
| 26 | -.248290 | -.152795 | -.131830 | -.237798 |
| 27 | -.229664 | -.138669 | -.107666 | -.227497 |
| 28 | -.207790 | -.126728 | -.103309 | -.212654 |
| 29 | -.175874 | -.112197 | -.077700 | -.190600 |
| 30 | -.132355 | -.084992 | -.047231 | -.157143 |
| 31 | -.089227 | -.047667 | -.003042 | -.116917 |
| 32 | -.059147 | -.015177 | .024724 | -.091358 |
| 33 | -.041560 | .007384 | .023506 | -.077800 |
| 34 | -.034189 | .023997 | .019244 | -.074104 |
| 35 | -.026450 | .027239 | .016800 | -.073490 |
| 36 | -.019081 | .038220 | .016821 | -.067443 |
| 37 | -.016478 | .067932 | .021012 | -.062276 |
| 38 | -.026203 | .098552 | .010189 | -.060213 |
| 39 | -.039624 | .110204 | -.018852 | -.055642 |
| 40 | -.049189 | .104362 | -.031652 | -.050268 |
| 41 | -.050247 | .099741 | -.049811 | -.041463 |
| 42 | -.048664 | .081981 | -.050525 | -.035121 |
| 43 | -.035988 | .075837 | -.038861 | -.035467 |
| 44 | -.015563 | .072638 | -.024363 | -.029725 |
| 45 | .005311 | .054757 | .012638 | -.008393 |
| 46 | .026966 | .036311 | .058049 | .021120 |
| 47 | .050049 | .019489 | .085127 | .046693 |
| 48 | .066735 | .007547 | .077147 | .071888 |
| 49 | .080661 | -.004679 | .055259 | .081134 |
| 50 | .088219 | -.009415 | .035835 | .083149 |
| 51 | .081520 | -.011603 | .018925 | .074348 |
| 52 | .070380 | -.020956 | .004682 | .064602 |
| 53 | .066370 | -.031491 | -.004229 | .062427 |
| 54 | .063248 | -.038369 | -.023491 | .067698 |
| 55 | .062190 | -.036867 | -.024608 | .080579 |
| 56 | .070701 | -.031041 | -.009218 | .090582 |
| 57 | .072319 | -.027859 | .005526 | .089188 |
| 58 | .072001 | -.022912 | .016079 | .078532 |
| 59 | .072949 | -.021345 | .01714 | .072600 |
| 60 | .070808 | -.014887 | .051875 | .065816 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-01 |
| 0 | .007096 | -.029211 | -.023361 | -.002474 | .005010 | .004593 |
| 1 | .387293 | -.390605 | -.263440 | -.047515 | -.376406 | .062506 |
| 2 | .490723 | -.579890 | -.333682 | .038256 | -.536821 | .089006 |
| 3 | .271485 | -.692052 | -.325380 | .172184 | -.300024 | .100482 |
| 4 | .016288 | -.519657 | -.201776 | .135018 | .039051 | .071719 |
| 5 | .032700 | -.295753 | -.113760 | .028821 | .018415 | .039593 |
| 6 | .034546 | -.234102 | -.087785 | .004654 | -.023136 | .032885 |
| 7-8 | -.014320 | -.261407 | -.088299 | .021948 | .056215 | .045427 |
| 9-11 | -.023326 | -.091880 | -.042251 | .025798 | .114471 | .020000 |
| 12-15 | -.014237 | -.051270 | -.021934 | -.002198 | .059514 | .009368 |
| 16-20 | .018039 | -.033653 | -.016473 | .005278 | .020731 | .006768 |
| 21-27 | .005322 | -.018562 | -.006887 | .008042 | .002681 | .003765 |
| 28-36 | .003960 | -.001192 | -.003163 | -.000270 | .006662 | .001206 |
| 37-47 | .000544 | -.000237 | -.001757 | -.001040 | .002273 | .000591 |
| 48-60 | -.000193 | -.001860 | -.000891 | .000539 | .004389 | .000582 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-01 | 10E-01 | 10E-02 | 10E-02 |
| 1 | .016348 | -.393047 | -.101213 | -.082734 | -.064383 | .248605 |
| 2 | .037490 | -.872282 | -.126496 | -.071628 | -.000259 | .275234 |
| 3 | .083723 | -.969112 | -.124516 | .027404 | .257902 | .288016 |
| 4 | .102143 | -.656351 | -.076546 | .091707 | .268544 | .174936 |
| 5 | .092871 | -.489396 | -.036974 | .070952 | .154485 | .044692 |
| 6 | .116228 | -.731299 | -.017508 | .080704 | .235451 | -.036056 |
| 7-8 | .114294 | -.946444 | -.012566 | .120545 | .274062 | -.014835 |
| 9-11 | .018572 | -.131270 | -.005986 | .058332 | .098605 | -.037446 |
| 12-15 | .032736 | -.110062 | -.004242 | .017749 | .054897 | -.015736 |
| 16-20 | .003032 | -.159599 | -.007078 | .011194 | .014521 | .001880 |
| 21-27 | -.000949 | -.062135 | -.001990 | .003966 | .016806 | -.006461 |
| 28-36 | -.000871 | -.015245 | -.001201 | .000595 | -.002100 | -.000602 |
| 37-47 | -.003330 | -.021975 | -.000487 | .001972 | .000325 | -.001770 |
| 48-60 | -.000033 | -.007950 | -.000176 | .000091 | .001059 | -.000936 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E-01 | 10E-02 |
| 0 | .013616 | .004987 | .015826 | .057214 |
| 1 | .182501 | .063497 | .254997 | .544741 |
| 2 | .247794 | .107293 | .382763 | .652095 |
| 3 | .257677 | .140842 | .446512 | .620806 |
| 4 | .167077 | .101481 | .338159 | .385039 |
| 5 | .091263 | .065045 | .250896 | .229038 |
| 6 | .071205 | .061390 | .288548 | .186907 |
| 7-8 | .072886 | .047373 | .355275 | .185515 |
| 9-11 | .036430 | .028417 | .208697 | .096669 |
| 12-15 | .020878 | .020440 | .144092 | .058349 |
| 16-20 | .016759 | .013659 | .113367 | .043884 |
| 21-27 | .008605 | .008226 | .081133 | .022592 |
| 28-36 | .005271 | .004883 | .043155 | .013038 |
| 37-47 | .003919 | .003751 | .033845 | .007495 |
| 48-60 | .002482 | .002174 | .023425 | .005176 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.81234 10E 00 | 0.49575 10E 00 | 0.24448 10E 00 | 0.33337 10E 00 | 0.16440 10E 00 | 0.10033 10E 00 |
| 0 | .186083 | -.503067 | -.771153 | .064586 | -.059163 | .400530 |
| 1 | .107396 | -.124095 | -.423552 | -.009812 | -.030050 | .130777 |
| 2 | -.026896 | .057478 | -.138826 | -.038422 | .042168 | -.005566 |
| 3 | -.098969 | .044437 | -.032423 | .085441 | .069229 | -.002950 |
| 4 | -.047229 | .072858 | .041936 | .074785 | .025650 | -.035796 |
| 5 | .050179 | .054436 | .040549 | -.003871 | -.022210 | -.019178 |
| 6 | .054347 | .032165 | .076768 | -.058604 | -.017713 | -.032170 |
| 7 | .012662 | .025796 | .129721 | -.064445 | .001900 | -.053830 |
| 8 | -.020145 | .057984 | .191998 | -.041225 | .043854 | -.077427 |
| 9 | -.084155 | .099996 | .208111 | .085416 | .070119 | -.079488 |
| 10 | -.030076 | .071041 | .182903 | .026918 | -.008881 | -.060976 |
| 11 | -.003915 | .006780 | .134877 | -.020834 | -.026131 | -.003611 |
| 12 | .017621 | -.069463 | .091886 | -.015465 | -.025750 | .034177 |
| 13 | .030036 | -.067758 | .098610 | -.102060 | -.060720 | .032161 |
| 14 | -.013940 | .014645 | .141305 | -.017697 | -.009907 | .007336 |
| 15 | -.038812 | -.041440 | .039398 | .058051 | .015705 | .017686 |
| 16 | .028052 | -.102577 | -.075605 | -.048801 | -.026078 | .049651 |
| 17 | -.001893 | -.012195 | -.069859 | -.033313 | -.019744 | -.006315 |
| 18 | .002387 | -.035414 | -.070933 | -.010328 | .007019 | .014279 |
| 19 | -.002764 | .014699 | -.029984 | .009632 | -.027758 | -.029467 |
| 20 | -.068801 | .042290 | .018621 | .080696 | .020051 | -.039847 |
| 21 | -.035630 | .059537 | .066552 | -.007837 | .001250 | -.036273 |
| 22 | .008716 | .089236 | .049622 | -.104226 | -.078428 | -.062110 |
| 23 | .003564 | -.009434 | -.048112 | .004959 | -.048224 | .017985 |
| 24 | .023175 | -.028459 | -.086440 | .016277 | -.039915 | .030834 |
| 25 | .004850 | .017451 | -.084343 | .028554 | -.025020 | -.012792 |
| 26 | .026604 | -.018709 | -.145905 | .036685 | -.033728 | .029506 |
| 27 | .044066 | .004633 | -.110893 | .046455 | -.002875 | .004034 |
| 28 | .094106 | .024243 | -.035777 | -.079094 | -.028221 | -.034577 |
| 29 | .050361 | .028245 | .048087 | .004368 | .021511 | -.012540 |
| 30 | -.030304 | .083102 | .107573 | .062512 | .057746 | -.052594 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .007462 | -.006667 | -.003196 | -.017126 | .004793 | .022207 |
| 1 | .069102 | -.030427 | -.101691 | .177006 | .168289 | .149256 |
| 2 | .078026 | -.042788 | -.196497 | .302175 | .100105 | .179876 |
| 3 | .079313 | -.134458 | -.271209 | .241677 | -.019978 | .305119 |
| 4 | .093020 | -.222739 | -.223560 | .082662 | -.096004 | .412200 |
| 5 | .066493 | -.166407 | -.127267 | .067439 | -.118786 | .313730 |
| 6 | .028616 | -.092060 | -.091876 | .163556 | .004526 | .146875 |
| 7 | .075333 | -.115470 | -.112590 | .005392 | .052010 | .135076 |
| 8 | .142959 | -.136848 | -.084187 | -.434554 | -.060090 | .166181 |
| 9-11 | .250965 | -.172180 | -.101534 | -.523257 | -.290060 | .241192 |
| 12-14 | .076417 | -.077998 | -.049557 | .464574 | -.084181 | .142227 |
| 15-21 | -.009644 | -.111247 | -.040683 | .421280 | .020074 | .150894 |
| 22-30 | .018386 | -.075865 | -.027152 | -.065334 | -.009391 | .107819 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|----------|----------|----------|----------|----------|----------|
| | 0.81234 | 0.49575 | 0.24448 | 0.33337 | 0.16440 | 0.10033 |
| | 10E 00 |
| 1 | .012865 | -.031047 | -.179299 | -.013586 | .032322 | .113557 |
| 2 | .013894 | .044878 | -.156811 | -.054533 | .040881 | .127672 |
| 3 | -.008075 | .093370 | -.135335 | -.022124 | .035183 | .142752 |
| 4 | .025628 | .086785 | -.119181 | .062599 | .100671 | .129251 |
| 5 | .011357 | .059734 | -.090794 | .018940 | .083916 | .094591 |
| 6 | .016000 | .018895 | -.105698 | .020015 | .056628 | .050633 |
| 7 | .003843 | -.048567 | -.083620 | -.004035 | .023678 | -.016442 |
| 8 | -.010722 | -.012092 | -.073840 | -.052742 | .009801 | .019578 |
| 9 | -.036550 | -.006055 | -.044189 | .067339 | .009848 | -.003182 |
| 10 | .009040 | .027342 | -.000999 | -.041813 | .028643 | .002639 |
| 11 | .037268 | .027043 | .020790 | .005940 | .038473 | -.004246 |
| 12 | .072141 | .008926 | .039113 | .056534 | .081297 | -.018219 |
| 13 | .026291 | -.017788 | .016931 | .068512 | .030735 | -.016803 |
| 14 | -.026433 | -.031587 | .055943 | -.022375 | -.051888 | -.063439 |
| 15 | -.042026 | -.061295 | .096315 | .003247 | -.032967 | -.081995 |
| 16 | -.021054 | .015882 | .080211 | -.004713 | -.038151 | .003498 |
| 17 | -.029153 | .008116 | .034255 | -.053786 | -.059876 | .020700 |
| 18 | -.022783 | -.019088 | .025437 | .017801 | -.056648 | -.003290 |
| 19 | -.013132 | .013616 | -.013508 | .044635 | -.050726 | .019528 |
| 20 | -.038287 | .030191 | -.023561 | .006165 | -.030132 | .040573 |
| 21 | -.088617 | .037336 | -.005516 | -.031643 | -.044634 | .037390 |
| 22 | -.071163 | -.055705 | .009856 | -.010805 | -.068194 | -.056228 |
| 23 | -.015147 | -.050943 | .015897 | -.041818 | -.034698 | -.056962 |
| 24 | -.033491 | -.051362 | -.002353 | -.044717 | -.014725 | -.058588 |
| 25 | .052304 | -.047365 | -.013514 | .003299 | .034359 | -.057325 |
| 26 | .081878 | -.025509 | -.022890 | .035387 | .074898 | -.051221 |
| 27 | .049386 | -.028507 | -.030909 | .127482 | .055203 | -.045489 |
| 28 | .121429 | .029578 | -.022810 | .037160 | .077640 | -.025139 |
| 29 | .080502 | .020463 | -.033672 | .015863 | .018443 | .002366 |
| 30 | .026671 | -.000750 | -.014086 | -.020247 | -.005167 | .008668 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|---------|
| | 10E-02 | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 1 | -.092923 | .284111 | -.049371 | -.097304 | .230965 | .126528 |
| 2 | .637489 | .563258 | -.092660 | -.084920 | .440255 | .236435 |
| 3 | .238925 | .740479 | -.131422 | -.109119 | .373338 | .356971 |
| 4 | -.358127 | .800810 | -.094857 | .043993 | .102197 | .383803 |
| 5 | .333574 | .573017 | -.042764 | .251413 | .149024 | .251042 |
| 6 | .581541 | .621715 | -.036153 | .186750 | .210759 | .205382 |
| 7 | .454191 | .746034 | -.046054 | -.127700 | .121077 | .244271 |
| 8 | -.330382 | .093696 | -.034418 | -.690239 | -.094098 | .130565 |
| 9-11 | -.143789 | -.628086 | -.039957 | -.295037 | -.099264 | .012983 |
| 12-14 | .143972 | -.304237 | -.018854 | -.082455 | .020060 | .018012 |
| 15-21 | .160189 | -.242411 | -.016622 | .195762 | .073432 | .036072 |
| 22-30 | -.256616 | -.060896 | -.006431 | -.068836 | -.057558 | .018238 |

RUN NO 90A 15M 6-18-63 1501-1601(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.12080 10E 01 | 0.54626 10E 00 | 0.20364 10E 00 | 0.49477 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .430366 | .193569 | .182637 | .652693 |
| 2 | .028385 | -.048745 | .034508 | .362453 |
| 3 | -.050834 | -.047132 | -.031600 | .192221 |
| 4 | -.098605 | -.009513 | -.075434 | .063316 |
| 5 | -.044338 | -.149573 | -.023092 | .002331 |
| 6 | -.034759 | -.038456 | -.044004 | -.091787 |
| 7 | -.085671 | -.084302 | -.087753 | -.177086 |
| 8 | -.199490 | -.004189 | -.107417 | -.244644 |
| 9 | -.246026 | .054937 | -.197613 | -.257979 |
| 10 | -.185656 | -.044653 | -.164315 | -.267930 |
| 11 | -.100624 | -.118967 | -.152993 | -.247550 |
| 12 | -.021661 | -.105861 | -.088712 | -.234455 |
| 13 | -.057690 | -.087873 | -.092101 | -.225500 |
| 14 | -.195398 | -.058331 | -.056477 | -.228287 |
| 15 | -.049321 | .012585 | .068616 | -.110146 |
| 16 | .122165 | -.032655 | .076081 | .004935 |
| 17 | .105800 | -.020829 | -.014655 | .007122 |
| 18 | .128965 | .042593 | .065903 | .014190 |
| 19 | .076541 | -.006453 | .025560 | -.026164 |
| 20 | -.012472 | .030462 | .071659 | -.056721 |
| 21 | -.105242 | -.092921 | .107115 | -.084486 |
| 22 | -.055253 | -.078659 | -.032985 | -.068839 |
| 23 | .053811 | .003393 | .036828 | .026378 |
| 24 | .092772 | .015262 | .102036 | .082304 |
| 25 | .057728 | -.094166 | .048729 | .107502 |
| 26 | .075758 | -.009925 | .052335 | .187262 |
| 27 | .059250 | .113116 | .020308 | .149475 |
| 28 | .019270 | -.004818 | -.101651 | .051553 |
| 29 | -.051004 | .086770 | .006499 | -.024780 |
| 30 | -.145165 | .016643 | -.058292 | -.067237 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .002689 | .015025 | .000003 | .042443 |
| 1 | .042209 | .204438 | .038875 | .559228 |
| 2 | .084341 | .260336 | .112551 | .781622 |
| 3 | .129446 | .301935 | .181809 | .860316 |
| 4 | .112803 | .270366 | .143905 | .607056 |
| 5 | .066359 | .235027 | .078727 | .324456 |
| 6 | .056816 | .304545 | .060772 | .225204 |
| 7 | .071119 | .368239 | .085287 | .266378 |
| 8 | .056952 | .303899 | .106219 | .184032 |
| 9-11 | .085078 | .183071 | .099322 | .171194 |
| 12-14 | .035566 | .268845 | .069847 | .105126 |
| 15-21 | .036339 | .252529 | .073971 | .072025 |
| 22-30 | .023300 | .188357 | .094942 | .058784 |

RUN NO 90A 46M 6-18-63 1501-1601(EST)

GROSS STATISTICS

| | | |
|------------------|------------------------|------------------|
| I CU UNSTABLE | WIND SPEED 5.77 M/SEC | SIGMA A 10.3 DEG |
| | WIND DIRECTION 226 DEG | SIGMA E 7.4 DEG |
| | SOLAR RAD. 0.88 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.13254E 01 | 0.10943E 01 | 0.70889E 00 | 0.81207E 00 |
| V | 0.10604E 01 | 0.93780E 00 | 0.79081E 00 | 0.55145E 00 |
| W | 0.52416E 00 | 0.51555E 00 | 0.45776E-00 | 0.24172E-00 |
| T | 0.96785E-01 | 0.21320E-01 | 0.10491E-01 | 0.16323E-01 |
| E | 0.14550E 01 | 0.12765E 01 | 0.97874E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.19952 | 0.18130 | 0.14592 | 0.15618 |
| V | 0.17847 | 0.16801 | 0.15412 | 0.12870 |
| W | 0.12548 | 0.12480 | 0.11726 | 0.08521 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.41523E-01 | 0.45417E-01 | 0.76711E-01 | 0.46079E-01 |
| U,W | -0.30259E-00 | -0.26873E-00 | -0.17659E-00 | -0.21119E-00 |
| U,T | -0.12399E-00 | -0.68710E-01 | -0.31340E-01 | -0.58096E-01 |
| V,W | -0.10492E-00 | -0.11016E-00 | -0.12461E-00 | -0.38596E-01 |
| V,T | 0.12680E-00 | 0.39642E-01 | 0.26653E-01 | 0.23932E-01 |
| W,T | -0.65413E-02 | -0.66409E-02 | -0.16375E-01 | 0.56727E-02 |

WE 0.29837E-01 0.79401E-02 -0.17879E-01

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.03502 | 0.04479 | 0.10245 | 0.06886 |
| U,W | -0.36304 | -0.35674 | -0.31000 | -0.47868 |
| U,T | -0.34619 | -0.44984 | -0.36342 | -0.50460 |
| V,W | -0.14073 | -0.15781 | -0.20710 | -0.10571 |
| V,T | 0.39578 | 0.28006 | 0.29262 | 0.25224 |
| W,T | -0.02904 | -0.06316 | -0.23630 | 0.09031 |

RUN NO 90A 46M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,P |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.74873 10E 00 | 0.56967 10E 00 | 0.86240 10E-01 | 0.60165 10E 00 | 0.91081 10E-01 | 0.69299 10E-01 |
| 0 | .102243 | -.309995 | -.363320 | -.207083 | .292805 | -.236332 |
| 1 | .104006 | -.283263 | -.327238 | -.176054 | .250797 | -.186821 |
| 2 | .102789 | -.241647 | -.275169 | -.122077 | .179839 | -.114617 |
| 3 | .093663 | -.203707 | -.231479 | -.073632 | .123477 | -.057954 |
| 4 | .085911 | -.178161 | -.196110 | -.040715 | .080980 | -.016686 |
| 5 | .081459 | -.159255 | -.162292 | -.021442 | .046134 | .020724 |
| 6 | .070805 | -.139503 | -.137198 | -.001364 | .016467 | .055532 |
| 7 | .053656 | -.114683 | -.118145 | .017743 | -.005138 | .077053 |
| 8 | .033801 | -.081464 | -.098869 | .022946 | -.011433 | .087498 |
| 9 | .014746 | -.053179 | -.071916 | .016324 | -.011602 | .090614 |
| 10 | .001791 | -.032029 | -.044550 | .007668 | -.015367 | .093920 |
| 11 | -.009443 | -.015420 | -.020749 | .012214 | -.024853 | .097594 |
| 12 | -.015836 | -.003937 | .001570 | .022002 | -.030852 | .097095 |
| 13 | -.023015 | .007507 | .027232 | .032981 | -.032475 | .090509 |
| 14 | -.033077 | .017417 | .045553 | .045483 | -.037657 | .085547 |
| 15 | -.043256 | .031958 | .057885 | .058328 | -.040239 | .075733 |
| 16 | -.051402 | .048444 | .066904 | .070662 | -.042255 | .059677 |
| 17 | -.065427 | .063995 | .070203 | .081628 | -.041608 | .043400 |
| 18 | -.079283 | .081006 | .074781 | .088460 | -.040997 | .032139 |
| 19 | -.088480 | .097507 | .084626 | .082160 | -.042227 | .027147 |
| 20 | -.092643 | .112684 | .093682 | .068438 | -.038619 | .017922 |
| 21 | -.097625 | .124164 | .098284 | .052478 | -.033758 | .006842 |
| 22 | -.099460 | .131585 | .105814 | .038192 | -.022997 | .000757 |
| 23 | -.104201 | .135176 | .114339 | .036509 | -.017820 | -.000594 |
| 24 | -.107347 | .133661 | .120898 | .039056 | -.022588 | -.003056 |
| 25 | -.100518 | .133520 | .130721 | .034581 | -.025612 | -.005719 |
| 26 | -.087031 | .137375 | .137332 | .023541 | -.022503 | -.013391 |
| 27 | -.071952 | .134959 | .138154 | .017328 | -.014867 | -.015278 |
| 28 | -.055824 | .126785 | .131975 | .012496 | -.016760 | -.014049 |
| 29 | -.042387 | .120238 | .121981 | .008753 | -.028879 | -.015702 |
| 30 | -.031543 | .110530 | .104145 | .000756 | -.040362 | -.022393 |
| 31 | -.019866 | .103000 | .086951 | -.006890 | -.040492 | -.033224 |
| 32 | -.005824 | .097013 | .071768 | -.016581 | -.036605 | -.047993 |
| 33 | .011888 | .086276 | .057505 | -.023556 | -.036927 | -.051783 |
| 34 | .026723 | .069028 | .046744 | -.026468 | -.037123 | -.048367 |
| 35 | .035637 | .048790 | .039257 | -.030551 | -.033282 | -.050823 |
| 36 | .047577 | .025273 | .029207 | -.034091 | -.028735 | -.055602 |
| 37 | .063289 | .013440 | .021686 | -.035582 | -.027020 | -.059687 |
| 38 | .073495 | .016203 | .012026 | -.034149 | -.025960 | -.058068 |
| 39 | .074845 | .017124 | .007759 | -.033114 | -.023345 | -.058438 |
| 40 | .068703 | .010661 | .003101 | -.033126 | -.017239 | -.054296 |
| 41 | .064939 | -.000059 | -.004768 | -.034446 | -.009329 | -.046925 |
| 42 | .061432 | -.007805 | -.012022 | -.030540 | -.007206 | -.034628 |
| 43 | .061300 | -.018720 | -.013685 | -.028175 | -.009257 | -.022844 |
| 44 | .060433 | -.025134 | -.016618 | -.029328 | -.005671 | -.013395 |
| 45 | .054521 | -.031069 | -.020529 | -.035756 | .002533 | -.003585 |
| 46 | .047094 | -.042340 | -.018538 | -.036361 | .001673 | .001980 |
| 47 | .045781 | -.055244 | -.012173 | -.031648 | -.003190 | .001096 |
| 48 | .043343 | -.061410 | -.005974 | -.027167 | -.007959 | -.002524 |
| 49 | .039092 | -.060582 | -.006000 | -.026223 | -.008489 | -.005863 |
| 50 | .030668 | -.053459 | -.007128 | -.018944 | -.009363 | -.003567 |
| 51 | .021029 | -.053929 | -.004067 | -.009556 | -.007621 | .001205 |
| 52 | .011267 | -.052412 | -.000794 | .002769 | .012442 | .002101 |
| 53 | .011603 | -.049468 | .004714 | .008508 | -.017772 | -.002224 |
| 54 | .008217 | -.044992 | .004153 | .009455 | -.021926 | -.001293 |
| 55 | .000561 | -.041056 | .002756 | .011765 | -.025645 | -.002950 |
| 56 | -.002073 | -.031182 | .002605 | .012022 | -.026841 | -.004398 |
| 57 | -.006053 | -.016069 | -.000974 | .011954 | -.025905 | -.006657 |
| 58 | -.009868 | -.009211 | .003547 | .016831 | -.025647 | -.006193 |
| 59 | -.011433 | -.005207 | .008498 | .021663 | -.023348 | -.001510 |
| 60 | -.015195 | -.004250 | .011519 | .029811 | -.018691 | .010271 |

RUN NC 90A 48M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.74873 10E 00 | 0.56967 10E 00 | 0.86240 10E-01 | 0.60165 10E 00 | 0.91081 10E-01 | 0.69299 10E-01 |
| 1 | .016822 | -.033246 | .000299 | .030179 | .026731 | -.049763 |
| 2 | .033842 | -.051094 | .006838 | .041740 | .032679 | -.062497 |
| 3 | .041893 | -.055924 | .009972 | .037680 | .036682 | -.055481 |
| 4 | .046585 | -.056380 | .010461 | .026530 | .043929 | -.047919 |
| 5 | .048174 | -.060835 | .013753 | .014878 | .050121 | -.044003 |
| 6 | .048055 | -.069778 | .018519 | .014766 | .058652 | -.048462 |
| 7 | .053502 | -.075082 | .019484 | .028997 | .059230 | -.053500 |
| 8 | .063647 | -.070015 | .021137 | .041363 | .053616 | -.049204 |
| 9 | .067659 | -.061109 | .020296 | .038626 | .051748 | -.045262 |
| 10 | .062931 | -.055289 | .017357 | .030701 | .051304 | -.042733 |
| 11 | .057124 | -.043828 | .008163 | .019624 | .060066 | -.035690 |
| 12 | .048656 | -.033992 | -.004685 | .011871 | .065037 | -.027517 |
| 13 | .040221 | -.023190 | -.017177 | .001558 | .066949 | -.016749 |
| 14 | .029767 | -.011956 | -.027164 | -.010636 | .069955 | -.007202 |
| 15 | .020447 | -.003043 | -.035342 | -.019078 | .070100 | -.002701 |
| 16 | .012266 | .001697 | -.044444 | -.021339 | .066295 | .000571 |
| 17 | .004520 | -.004233 | -.051247 | -.022006 | .059630 | .011233 |
| 18 | -.002662 | -.005918 | -.058897 | -.017436 | .048571 | .022981 |
| 19 | -.002498 | -.001183 | -.062723 | -.016040 | .037488 | .036144 |
| 20 | .002111 | .003023 | -.062805 | -.010593 | .028316 | .048021 |
| 21 | .011469 | .000753 | -.058900 | -.001185 | .027371 | .053358 |
| 22 | .022901 | -.006613 | -.053307 | .005686 | .029824 | .046658 |
| 23 | .026886 | -.010653 | -.050575 | .011555 | .028756 | .038031 |
| 24 | .029894 | -.016018 | -.050597 | .016498 | .020722 | .033600 |
| 25 | .033792 | -.013166 | -.048601 | .016097 | .009534 | .035282 |
| 26 | .033747 | -.001336 | -.044240 | .017359 | .001088 | .035920 |
| 27 | .030351 | .004235 | -.038227 | .017553 | .002030 | .029762 |
| 28 | .023970 | .009603 | -.031052 | .010911 | .005823 | .029196 |
| 29 | .011919 | .013804 | -.034079 | .000262 | .004682 | .033283 |
| 30 | -.000551 | .017660 | -.039686 | -.017516 | -.000436 | .038846 |
| 31 | -.008169 | .011795 | -.040366 | -.027549 | -.007349 | .043804 |
| 32 | -.009502 | .001821 | -.038820 | -.026164 | -.012504 | .043289 |
| 33 | -.006015 | -.006234 | -.036560 | -.028413 | -.021534 | .042824 |
| 34 | -.006085 | -.004762 | -.032984 | -.024875 | -.034382 | .038804 |
| 35 | -.013813 | -.005030 | -.028985 | -.020049 | -.040720 | .036523 |
| 36 | -.018353 | -.000935 | -.023409 | -.011077 | -.039233 | .035704 |
| 37 | -.014337 | -.001682 | -.010659 | -.012943 | -.027601 | .028656 |
| 38 | .001679 | .002917 | .001299 | -.010498 | -.014504 | .020760 |
| 39 | .016410 | .002867 | .008394 | -.008462 | -.002003 | .010111 |
| 40 | .023248 | .002978 | .021897 | -.000338 | .008800 | -.003729 |
| 41 | .026076 | .002368 | .034413 | .007133 | .017686 | -.014457 |
| 42 | .026955 | -.002250 | .046281 | .012796 | .029784 | -.022702 |
| 43 | .029254 | -.009490 | .062023 | .015975 | .036315 | -.032119 |
| 44 | .028456 | -.006491 | .077178 | .021333 | .035162 | -.043132 |
| 45 | .019610 | -.001432 | .085895 | .028068 | .032851 | -.060659 |
| 46 | .010287 | -.000522 | .088082 | .040145 | .029332 | -.076693 |
| 47 | .003854 | .000201 | .088008 | .053012 | .018519 | -.087805 |
| 48 | .004250 | -.000124 | .090942 | .062177 | .013834 | -.094474 |
| 49 | .009595 | -.003936 | .092047 | .063100 | .013821 | -.100077 |
| 50 | .013534 | -.005329 | .086098 | .055432 | .015462 | -.098184 |
| 51 | .008260 | -.001137 | .075686 | .042458 | .018425 | -.088192 |
| 52 | .004733 | .005348 | .067858 | .037490 | .015223 | -.075056 |
| 53 | .007706 | .009774 | .064459 | .036600 | .007452 | -.064041 |
| 54 | .004635 | .013141 | .057828 | .031241 | .001769 | -.048390 |
| 55 | -.001617 | .010583 | .047355 | .025875 | .000731 | -.037420 |
| 56 | -.008964 | .009996 | .034386 | .010189 | .003771 | -.029501 |
| 57 | -.016485 | .009554 | .018903 | -.001886 | .006496 | -.020269 |
| 58 | -.017630 | .005460 | .010349 | -.009562 | .009684 | -.015224 |
| 59 | -.017055 | .002996 | .007656 | -.014384 | .010772 | -.017400 |
| 60 | -.019007 | .004004 | .005190 | -.015090 | .006947 | -.010810 |

RUN NO 90A 46M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.70893 10E 00 | 0.79075 10E 00 | 0.45777 10E 00 | 0.10491 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .868341 | .838005 | .785606 | .839520 |
| 2 | .701691 | .630611 | .512177 | .647090 |
| 3 | .569455 | .473036 | .324925 | .510779 |
| 4 | .464387 | .349993 | .213018 | .409094 |
| 5 | .374269 | .249388 | .135076 | .316842 |
| 6 | .296486 | .158089 | .067823 | .228670 |
| 7 | .226561 | .074295 | .007262 | .155942 |
| 8 | .157175 | .014538 | -.041402 | .100941 |
| 9 | .095614 | -.027384 | -.073259 | .054043 |
| 10 | .038697 | -.055192 | -.101221 | .005828 |
| 11 | -.012762 | -.088101 | -.121259 | -.037257 |
| 12 | -.058694 | -.128952 | -.132811 | -.076231 |
| 13 | -.102583 | -.156713 | -.142257 | -.105038 |
| 14 | -.138012 | -.175686 | -.147561 | -.122970 |
| 15 | -.166268 | -.195655 | -.145955 | -.141764 |
| 16 | -.194905 | -.207090 | -.140496 | -.150028 |
| 17 | -.226025 | -.217086 | -.143633 | -.153935 |
| 18 | -.254517 | -.233871 | -.153947 | -.158229 |
| 19 | -.286177 | -.250862 | -.160110 | -.170829 |
| 20 | -.312917 | -.260643 | -.157657 | -.181704 |
| 21 | -.329303 | -.264681 | -.142208 | -.192027 |
| 22 | -.332111 | -.258209 | -.130810 | -.203474 |
| 23 | -.328573 | -.246781 | -.129729 | -.213518 |
| 24 | -.323765 | -.242173 | -.141202 | -.219978 |
| 25 | -.314305 | -.232803 | -.150425 | -.225791 |
| 26 | -.303044 | -.213597 | -.145377 | -.226147 |
| 27 | -.282116 | -.183019 | -.150666 | -.224867 |
| 28 | -.254564 | -.149948 | -.165399 | -.220128 |
| 29 | -.224155 | -.125611 | -.165748 | -.208580 |
| 30 | -.190639 | -.098696 | -.141021 | -.183432 |
| 31 | -.153867 | -.062324 | -.097062 | -.147600 |
| 32 | -.124783 | -.035101 | -.057842 | -.110512 |
| 33 | -.095615 | -.010928 | -.034707 | -.079987 |
| 34 | -.068336 | .015360 | -.017492 | -.061108 |
| 35 | -.037075 | .043458 | -.000742 | -.043492 |
| 36 | -.005318 | .068792 | .022841 | .032766 |
| 37 | .015090 | .083063 | .036777 | -.021792 |
| 38 | .027005 | .090008 | .033090 | -.018802 |
| 39 | .025364 | .101815 | .032685 | -.016292 |
| 40 | .027907 | .113747 | .034387 | -.009573 |
| 41 | .038481 | .120895 | .040851 | -.002384 |
| 42 | .043201 | .115349 | .046049 | -.003243 |
| 43 | .042616 | .093281 | .040115 | -.009199 |
| 44 | .051572 | .073894 | .031479 | -.017724 |
| 45 | .057182 | .058391 | .037156 | -.024820 |
| 46 | .061451 | .038017 | .047742 | -.035294 |
| 47 | .063705 | .021676 | .058728 | -.046533 |
| 48 | .064876 | .010867 | .063543 | -.048969 |
| 49 | .060739 | .007921 | .060235 | -.042649 |
| 50 | .050860 | .004956 | .049939 | -.039521 |
| 51 | .044056 | .002671 | .049653 | -.038699 |
| 52 | .031131 | -.010746 | .052841 | -.04260 |
| 53 | .015952 | -.029141 | .052576 | -.0 8470 |
| 54 | .002162 | -.043281 | .042187 | -.001566 |
| 55 | -.007004 | -.058194 | .038688 | .011074 |
| 56 | -.012278 | -.077168 | .034287 | .012367 |
| 57 | -.017872 | -.093005 | .031991 | .016244 |
| 58 | -.026796 | -.098499 | .038229 | .010577 |
| 59 | -.035129 | -.093523 | .034320 | .004232 |
| 60 | -.033016 | -.092249 | .021188 | -.002697 |

RUN NO 90A 46M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 0 | -.004681 | -.030898 | -.077773 | .002217 | .032251 | .023419 |
| 1 | .069367 | -.363630 | -.640458 | -.022744 | .291246 | .127887 |
| 2 | .255044 | -.459867 | -.715099 | -.122462 | .313622 | .007958 |
| 3 | .349346 | -.383386 | -.620489 | -.219463 | .307527 | -.181902 |
| 4 | .130901 | -.147315 | -.290258 | -.166351 | .268953 | -.245882 |
| 5 | -.017830 | -.066571 | -.148382 | -.084741 | .249403 | -.009931 |
| 6 | .010594 | -.069621 | -.150336 | -.054655 | .194683 | -.198534 |
| 7-8 | .024894 | -.058893 | -.084961 | -.056004 | .132704 | -.127822 |
| 9-11 | -.008392 | -.022109 | -.050015 | -.076273 | .113494 | -.072337 |
| 12-15 | -.007502 | -.013722 | -.048315 | -.024020 | .057059 | -.045513 |
| 16-20 | .005099 | -.019989 | -.021681 | -.013913 | .024710 | -.019485 |
| 21-27 | -.000242 | -.006830 | -.010665 | -.014956 | .024934 | -.018967 |
| 28-36 | -.002689 | -.002784 | -.010384 | -.001217 | .007893 | -.009492 |
| 37-47 | -.000437 | -.001108 | -.003609 | -.002242 | .004795 | -.004062 |
| 48-60 | .000102 | -.001675 | -.002813 | -.001021 | .001355 | -.002868 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .164537 | -.751973 | -.214031 | .123002 | .256318 | .068582 |
| 2 | .124602 | -.817738 | -.118998 | .194296 | .235753 | -.019524 |
| 3 | .116087 | -.990746 | .090180 | .486235 | .211505 | -.157544 |
| 4 | .088193 | -.933776 | .113123 | .337542 | .076581 | -.125492 |
| 5 | .078680 | -.771436 | .063811 | .520889 | .008114 | -.078342 |
| 6 | .080077 | -.642465 | .058197 | .709776 | .030134 | -.064453 |
| 7-8 | -.009027 | -.309444 | -.022553 | .048947 | .005504 | -.009034 |
| 9-11 | .001425 | -.009094 | -.011410 | -.006073 | .030626 | -.028423 |
| 12-15 | .011127 | -.072516 | .000761 | .190606 | -.001637 | -.016988 |
| 16-20 | .006771 | -.076949 | .001379 | .170565 | .005945 | -.018925 |
| 21-27 | -.003307 | -.063423 | -.000307 | .015802 | .011056 | -.013777 |
| 28-36 | .001101 | -.000782 | -.002491 | .016784 | .003282 | -.002953 |
| 37-47 | -.001495 | -.003280 | -.001507 | .004407 | .003628 | -.002558 |
| 48-60 | -.000370 | -.002675 | -.000301 | -.001627 | -.000112 | -.000038 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-00 | 10E-01 | 10E-02 |
| 0 | .010729 | .006955 | .019392 | .019309 |
| 1 | .106036 | .070995 | .308895 | .155360 |
| 2 | .137802 | .110456 | .491427 | .171558 |
| 3 | .138737 | .137649 | .574123 | .164426 |
| 4 | .075755 | .091149 | .418492 | .103834 |
| 5 | .035990 | .050986 | .331763 | .066693 |
| 6 | .031282 | .047310 | .326876 | .064245 |
| 7-8 | .027067 | .038408 | .232233 | .043470 |
| 9-11 | .014928 | .023214 | .160652 | .024392 |
| 12-15 | .010264 | .013773 | .105205 | .017239 |
| 16-20 | .006458 | .007944 | .075609 | .010073 |
| 21-27 | .004051 | .006652 | .052685 | .008246 |
| 28-36 | .002488 | .003243 | .026525 | .004899 |
| 37-47 | .001537 | .002190 | .015539 | .002847 |
| 48-60 | .001048 | .001249 | .009951 | .001884 |

RUN NO 90A 46M 6-18-63 1501-1601(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.66931 10E 00 | 0.44309 10E 00 | 0.11512 10E 00 | 0.36518 10E 00 | 0.94876 10E-01 | 0.62809 10E-01 |
| 0 | .068846 | -.476636 | -.504654 | -.105692 | .252240 | .090316 |
| 1 | -.004704 | -.273731 | -.344523 | .063482 | .114682 | .213415 |
| 2 | -.056230 | -.042354 | -.190291 | .081083 | .058164 | .121296 |
| 3 | -.036522 | .065926 | -.074093 | .007912 | .024386 | .038279 |
| 4 | .017230 | .092376 | -.027543 | -.014794 | .007311 | -.017928 |
| 5 | .002101 | .096661 | .023733 | -.004750 | .022904 | -.048688 |
| 6 | .007491 | .089206 | .060691 | .002167 | .004569 | -.045219 |
| 7 | .003512 | .077427 | .075487 | .001488 | .028733 | -.062144 |
| 8 | .026941 | .050938 | .085569 | -.038359 | .014119 | -.059881 |
| 9 | .011527 | .032508 | .094536 | -.013231 | -.048901 | -.071871 |
| 10 | -.003015 | .049200 | .099951 | .018179 | -.074552 | -.040994 |
| 11 | -.026302 | .067146 | .107250 | -.024183 | -.018261 | -.038361 |
| 12 | -.028947 | .003673 | .118561 | -.041863 | -.035156 | .013122 |
| 13 | -.061947 | .007826 | .129795 | .023957 | -.065281 | .007295 |
| 14 | -.033165 | .014722 | .109321 | .046899 | -.082437 | .001597 |
| 15 | .044609 | -.059115 | .105662 | .003384 | -.029615 | .004463 |
| 16 | .047123 | -.037163 | .084475 | -.069819 | .002190 | -.034585 |
| 17 | -.003554 | .013260 | .102749 | -.010432 | -.0423 | -.065171 |
| 18 | -.000576 | -.020878 | .115281 | .045624 | -.068973 | -.048389 |
| 19 | -.021539 | -.007427 | .098710 | .072812 | -.067371 | .010255 |
| 20 | -.049819 | -.013115 | .023879 | .041570 | -.058371 | .031873 |
| 21 | -.021533 | .023595 | -.001301 | -.008043 | -.021096 | .003959 |
| 22 | -.010992 | .044487 | -.008417 | -.056041 | .011401 | -.009100 |
| 23 | .057487 | .003002 | -.076719 | -.104957 | .048247 | .022599 |
| 24 | .077918 | -.053512 | -.129P.3 | -.077811 | .030825 | .014334 |
| 25 | .078260 | -.095522 | -.116294 | -.036576 | .009311 | -.003514 |
| 26 | .112649 | -.034896 | -.046518 | -.031455 | -.014521 | -.060070 |
| 27 | .047425 | .065128 | -.036856 | -.038954 | .006463 | -.109192 |
| 28 | .007388 | .082743 | .001333 | -.039600 | .026488 | -.079349 |
| 29 | .022530 | .105050 | .056264 | .048678 | .001877 | -.049091 |
| 30 | -.008232 | .122187 | .0008510 | .063025 | .030327 | -.048288 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-02 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 0 | -.120692 | -.006749 | -.002100 | .033120 | .029639 | .012369 |
| 1 | -.356606 | -.060935 | -.070951 | .256710 | .329345 | .138693 |
| 2 | .093584 | -.114518 | -.100219 | .163918 | .346381 | .177873 |
| 3 | -.059472 | -.204316 | -.089092 | .316156 | .237860 | .223855 |
| 4 | -.301666 | -.241118 | -.057131 | .297495 | .117041 | .221536 |
| 5 | -.379025 | -.211516 | -.052521 | .022996 | .098709 | .199307 |
| 6 | -.267340 | -.178298 | -.039032 | .124466 | .073331 | .113394 |
| 7 | .734215 | -.190912 | -.032050 | -.068129 | .127637 | .027193 |
| 8 | .710474 | -.172076 | -.029545 | -.180357 | .171903 | .045164 |
| 9-11 | .225690 | -.109237 | -.017597 | -.160684 | .122541 | .022384 |
| 12-14 | .582185 | -.081026 | -.013120 | -.241089 | .017817 | -.030752 |
| 15-21 | .378679 | -.040860 | -.006853 | -.454206 | .060216 | -.039145 |
| 22-30 | .093630 | -.016668 | -.005879 | -.296792 | .071896 | -.066562 |

RUN NC 90A 46M 6-18-63 1501-1601(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.66931 10E 00 | 0.44309 10E 00 | 0.11512 10E 00 | 0.36518 10E 00 | 0.94876 10E-01 | 0.62809 10E-01 |
| 1 | .125004 | -.094449 | -.003143 | .071594 | .130396 | -.045290 |
| 2 | .149068 | -.059061 | -.043611 | .065113 | .174276 | .021401 |
| 3 | .180281 | -.69065 | -.026725 | .085545 | .181348 | .019882 |
| 4 | .185144 | -.049685 | .028355 | .101046 | .182619 | -.040217 |
| 5 | .138778 | -.046868 | .079924 | .136212 | .160806 | -.090660 |
| 6 | .056103 | -.036689 | .043245 | .013006 | .095088 | -.041313 |
| 7 | .034335 | -.008442 | .009737 | -.051729 | .055730 | .034004 |
| 8 | -.025495 | -.008201 | .003354 | -.059881 | .038782 | .053767 |
| 9 | .020415 | -.010166 | -.021045 | -.020306 | .076891 | .043932 |
| 10 | .030997 | .045712 | -.026866 | -.093637 | .049147 | .093270 |
| 11 | .041832 | .026963 | .001919 | -.060378 | .023315 | .038125 |
| 12 | .034734 | -.015364 | .024914 | .035474 | .045531 | -.024451 |
| 13 | -.001275 | -.016279 | .038447 | .063408 | -.005910 | -.049427 |
| 14 | -.061858 | -.025506 | .002299 | -.055087 | -.015322 | -.040459 |
| 15 | -.123712 | -.034414 | .017321 | -.108821 | -.043816 | -.033644 |
| 16 | -.093731 | -.007069 | .010918 | -.025547 | -.079119 | -.006585 |
| 17 | -.041539 | .013759 | .024727 | .010791 | -.034737 | .000752 |
| 18 | -.077934 | .021880 | .045254 | .020271 | -.046837 | -.012577 |
| 19 | -.115920 | .045949 | -.006035 | -.033805 | -.040140 | .011535 |
| 20 | -.098011 | .019602 | -.078157 | .036457 | -.041988 | -.007912 |
| 21 | .023322 | -.012851 | -.095043 | .028908 | -.006864 | .007843 |
| 22 | .024703 | .021887 | -.109530 | .071778 | -.036986 | .030297 |
| 23 | .024905 | .044432 | -.099924 | .090257 | -.009768 | .001295 |
| 24 | .039229 | -.005630 | -.059774 | -.018098 | .039294 | -.002626 |
| 25 | .055134 | -.029853 | -.039995 | .023608 | .029786 | -.044257 |
| 26 | .061072 | -.012264 | -.042680 | .052578 | .000512 | .006842 |
| 27 | .032881 | -.017557 | -.002068 | .051085 | .004632 | -.018528 |
| 28 | .062712 | .007776 | .039096 | .025647 | .061060 | -.044702 |
| 29 | .067688 | -.003130 | .091048 | -.005268 | -.009127 | -.040416 |
| 30 | -.023680 | .040703 | .087895 | -.063590 | -.059836 | -.033897 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 1 | .097000 | -.458531 | .059955 | -.011150 | .374380 | .004666 |
| 2 | .272164 | -.599158 | .114354 | .016713 | .495327 | .013994 |
| 3 | .360507 | -.655636 | -.002339 | .090125 | .529654 | -.005939 |
| 4 | .215528 | -.732417 | .039311 | .111106 | .343972 | -.077010 |
| 5 | .197592 | -.904348 | .086207 | .098369 | .270684 | -.121604 |
| 6 | .252968 | -.584509 | -.083964 | .093268 | .278469 | -.047823 |
| 7 | .181693 | -.113557 | -.130326 | .042133 | .221381 | .068658 |
| 8 | .068643 | -.107820 | -.150535 | -.026789 | .116036 | .118969 |
| 9-11 | -.018189 | -.338378 | -.081776 | -.015401 | .020567 | .025817 |
| 12-14 | .013793 | -.143345 | .018535 | -.007355 | .031960 | -.036968 |
| 15-21 | .034845 | -.206624 | .043981 | .021069 | .032859 | -.043119 |
| 22-30 | .013072 | -.188227 | .018347 | .014516 | .005643 | -.019289 |

RUN NC 90A 46M 6-18-63 1501-1601(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.81213 10E 00 | 0.55161 10E 00 | 0.24175 10E 00 | 0.16318 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .554101 | .316218 | .184323 | .654262 |
| 2 | .187538 | -.044726 | -.021244 | .408416 |
| 3 | .030703 | -.053218 | -.098207 | .234077 |
| 4 | -.055188 | -.052496 | -.112285 | .128832 |
| 5 | -.110010 | -.115302 | -.064515 | .023663 |
| 6 | -.128156 | -.184514 | -.108492 | -.010031 |
| 7 | -.115745 | -.032567 | -.120423 | -.040808 |
| 8 | -.127368 | .044534 | -.050490 | -.077120 |
| 9 | -.123362 | -.090244 | .004150 | -.108759 |
| 10 | -.142823 | -.105156 | -.064143 | -.144933 |
| 11 | -.169535 | -.077938 | -.050161 | -.182632 |
| 12 | -.139108 | -.116590 | -.035365 | -.229838 |
| 13 | -.160798 | -.167913 | -.037159 | .233948 |
| 14 | -.154500 | -.181013 | -.064983 | -.205916 |
| 15 | -.079846 | -.009792 | .057206 | -.212379 |
| 16 | -.032450 | .106184 | .077675 | -.161275 |
| 17 | -.084234 | .060952 | .048777 | -.162301 |
| 18 | -.043767 | .078792 | .062648 | -.158921 |
| 19 | .000303 | .071590 | .015698 | -.151049 |
| 20 | .023968 | .084525 | -.044705 | -.100494 |
| 21 | -.001405 | .009306 | -.029867 | -.037371 |
| 22 | -.028634 | -.046076 | -.027481 | .017282 |
| 23 | .025293 | .081911 | -.020763 | .050200 |
| 24 | .117544 | .036735 | .056147 | .102275 |
| 25 | .196711 | -.055632 | .004817 | .070887 |
| 26 | .131834 | -.041462 | -.052116 | -.005310 |
| 27 | .018097 | .035805 | -.083534 | .019347 |
| 28 | -.045364 | .001487 | -.107941 | -.014813 |
| 29 | -.126386 | -.095579 | -.109142 | -.070826 |
| 30 | -.092049 | -.097661 | -.042957 | .015280 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .033235 | .011046 | .006200 | .040288 |
| 1 | .578337 | .151810 | .048127 | .290025 |
| 2 | .882450 | .301540 | .075633 | .287775 |
| 3 | .983480 | .446851 | .137144 | .228321 |
| 4 | .755118 | .335135 | .156196 | .131233 |
| 5 | .631248 | .242004 | .130866 | .108985 |
| 6 | .587711 | .368148 | .132929 | .095407 |
| 7 | .581152 | .455321 | .156545 | .087649 |
| 8 | .472307 | .339698 | .129834 | .075778 |
| 9-11 | .329857 | .222123 | .103817 | .042478 |
| 12-14 | .243601 | .212319 | .112851 | .031082 |
| 15-21 | .180595 | .222579 | .085405 | .024424 |
| 22-30 | .110745 | .154822 | .105514 | .021435 |

RUN NC 90A 15M 6-18-63 1501-1601(EST)
 RUN NO 90A 46M 6-18-63 1501-1601(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .389065 | .242417 | .695524 | .141680 |
| 1 | .407322 | .577664 | .367978 | .181762 |
| 2 | .346700 | .619324 | .187711 | .159098 |
| 3 | .252736 | .624378 | .153507 | .125588 |
| 4 | .145480 | .524253 | .294672 | .111645 |
| 5 | .113959 | .230890 | .241284 | .207428 |
| 6 | .033469 | .075281 | .101191 | .127401 |
| 7-8 | .084099 | .159116 | .149900 | .142622 |
| 9-11 | .195002 | .198467 | .222945 | .126478 |
| 12-15 | .087542 | .114444 | .250464 | .176295 |
| 16-20 | .064411 | .075463 | .154725 | .042750 |
| 21-27 | .111525 | .126975 | .145640 | .091104 |
| 28-36 | .094826 | .111755 | .135549 | .150958 |
| 37-47 | .131385 | .132448 | .091395 | .064640 |
| 48-60 | .107173 | .089916 | .089051 | .160088 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 02 | 10E 00 |
| 0 | .378715 | .182030 | .167270 | .686565 |
| 1 | .407485 | .561422 | .002415 | .510449 |
| 2 | .602267 | .601138 | .003329 | .356537 |
| 3 | .619428 | .622270 | .005033 | .406936 |
| 4 | .679173 | .589034 | .006242 | .495138 |
| 5 | .668433 | .574629 | .006453 | .567317 |
| 6 | .564013 | .602306 | .006052 | .293370 |
| 7 | .535844 | .674885 | .006349 | .031241 |
| 8 | .350973 | .662555 | .006047 | .053043 |
| 9-11 | .365968 | .607736 | .003503 | .109853 |
| 12-14 | .365355 | .747671 | .002403 | .232782 |
| 15-21 | .231971 | .505256 | .004137 | .238802 |
| 22-30 | .211600 | .397127 | .002904 | .259322 |

RUN NO 908 46M 6-18-63 1615-17.4(EST)

GROSS STATISTICS

| | | |
|-----------------------|------------------------|------------------|
| CLEAR TRANSITIONAL | WIND SPEED 6.75 M/SEC | SIGMA A 9.00 DEG |
| | WIND DIRECTION 236 DEG | SIGMA E 6.8 DEG |
| | SOLAR RAD. 0.50 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.18275E 01 | 0.15500E 01 | 0.84702E 00 | 0.11836E 01 |
| V | 0.10147E 01 | 0.95661E 00 | 0.84405E 00 | 0.49146E-00 |
| W | 0.51687E 00 | 0.51351E 00 | 0.45616E-00 | 0.24206E-00 |
| T | 0.93347E-01 | 0.63246E-02 | 0.28472E-02 | 0.47534E 02 |
| E | 0.16795E 01 | 0.15102E 01 | 0.10736E 01 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.20027 | 0.18445 | 0.13635 | 0.16118 |
| V | 0.14923 | 0.14490 | 0.13611 | 0.10386 |
| W | 0.10651 | 0.10616 | 0.10006 | 0.07289 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.87931E-01 | 0.51468E-01 | 0.13405E-01 | 0.24760E-01 |
| U,W | -0.45066E-00 | -0.43217E-00 | -0.26657E-00 | -0.34348E-00 |
| U,T | -0.13208E-00 | -0.51384E-01 | -0.16229E-01 | -0.43429E-01 |
| V,W | -0.69375E-01 | -0.59222E-01 | -0.48840E-01 | -0.15515E-01 |
| V,T | 0.44716E-01 | 0.34188E-02 | -0.14687E-03 | 0.42966E-02 |
| W,T | 0.12281E-03 | 0.24260E-02 | -0.87123E-02 | 0.93743E-02 |
| WE | 0.11195E-00 | 0.11586E-00 | 0.99586E-02 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.06457 | 0.04227 | 0.01585 | 0.03246 |
| U,W | -0.46369 | -0.48441 | -0.42885 | -0.64169 |
| U,T | -0.31979 | -0.51896 | -0.33046 | -0.57899 |
| V,W | -0.09580 | -0.08450 | -0.07871 | -0.04498 |
| V,T | 0.14529 | 0.04395 | -0.00300 | 0.08890 |
| W,T | 0.00056 | 0.04257 | -0.24175 | 0.27636 |

RUN NO 90B 46M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.84567 10E 00 | 0.62173 10E 00 | 0.49110 10E-01 | 0.62073 10E 00 | 0.49031 10E-01 | 0.36047 10E-01 |
| 0 | .015900 | -.428838 | -.310464 | -.078494 | -.003064 | -.241664 |
| 1 | .010390 | -.396148 | -.289554 | -.062045 | -.000329 | -.147588 |
| 2 | .001012 | -.342095 | -.232276 | -.035844 | .002097 | -.038920 |
| 3 | -.006896 | -.283460 | -.190137 | -.011736 | .009718 | .019561 |
| 4 | -.010898 | -.229259 | -.159621 | .006840 | .007702 | .042687 |
| 5 | -.014503 | -.185898 | -.132728 | .014295 | -.000310 | .055360 |
| 6 | -.017731 | -.143836 | -.110101 | .021252 | -.012980 | .062460 |
| 7 | -.012536 | -.103437 | -.087146 | .017568 | -.016935 | .060705 |
| 8 | -.005366 | -.065457 | -.062375 | .009414 | -.013536 | .064695 |
| 9 | -.001691 | -.031418 | -.038043 | .003055 | -.005810 | .063417 |
| 10 | .003474 | -.008486 | -.019013 | -.003581 | .000987 | .054330 |
| 11 | .013849 | .008896 | -.008548 | -.005597 | -.001146 | .051637 |
| 12 | .021552 | .032736 | -.002685 | -.006959 | -.009526 | .040295 |
| 13 | .024227 | .056914 | -.001180 | -.006670 | -.020748 | .029677 |
| 14 | .024173 | .079735 | -.002827 | -.002670 | -.026477 | .024468 |
| 15 | .027771 | .092787 | -.010114 | .001128 | -.022892 | .022154 |
| 16 | .032528 | .094993 | .029247 | .003751 | -.016646 | .030745 |
| 17 | .035818 | .095435 | .046084 | .002920 | -.007344 | .033049 |
| 18 | .027687 | .094541 | .053748 | .002126 | -.002383 | .025935 |
| 19 | .020020 | .048867 | .061354 | -.000170 | -.004228 | .022949 |
| 20 | .017298 | .102043 | .068378 | -.012895 | .006919 | .012008 |
| 21 | .012563 | .106576 | .082526 | -.024115 | .024933 | .010087 |
| 22 | .004726 | .111512 | .100246 | -.028682 | .041025 | .011189 |
| 23 | -.004623 | .116208 | .104736 | -.028968 | .051397 | .007757 |
| 24 | -.015521 | .128619 | .097033 | -.021584 | .053014 | .012337 |
| | -.024624 | .140317 | .080896 | -.008357 | .042601 | .014119 |
| | -.028565 | .146039 | .064136 | -.000409 | .030171 | .011430 |
| | -.026896 | .140026 | .056015 | .004496 | .021460 | .009682 |
| | -.026727 | .126980 | .055012 | .015176 | .019917 | .004153 |
| | -.035646 | .114072 | .052169 | .025800 | .022323 | .002368 |
| 30 | -.041588 | .095104 | .049526 | .030595 | .019178 | -.004244 |
| 31 | -.039776 | .070448 | .047526 | .024717 | .015426 | -.015644 |
| 32 | -.027830 | .051695 | .042872 | .021029 | .017693 | -.031034 |
| 33 | -.014183 | .043377 | .037168 | .019183 | .016303 | -.039672 |
| 34 | -.011078 | .035065 | .031986 | .026692 | .007586 | -.030097 |
| 35 | -.010730 | .023687 | .029195 | .042301 | -.000248 | -.025733 |
| 36 | -.005912 | .013469 | .026634 | .049491 | -.008062 | -.020170 |
| 37 | -.003820 | .008333 | .023422 | .055367 | -.014211 | -.014370 |
| 38 | .002047 | .006111 | .017477 | .042356 | -.024003 | -.014209 |
| 39 | .007299 | .008504 | .016884 | .027265 | -.037875 | -.025841 |
| 40 | .005425 | .008218 | .024768 | .020037 | -.044117 | -.030204 |
| 41 | .005514 | .001217 | .029688 | .012988 | -.042224 | -.028515 |
| 42 | .008329 | -.009610 | .032515 | .007499 | -.038994 | -.035807 |
| 43 | .009215 | -.021775 | .037740 | -.001753 | -.034489 | -.053240 |
| 44 | .011002 | -.025430 | .042568 | -.006836 | -.032266 | -.061594 |
| 45 | .010534 | -.013564 | .031454 | -.000102 | -.030628 | -.066138 |
| 46 | .006861 | .002881 | .015384 | .005390 | -.036786 | -.073437 |
| 47 | .000786 | .011323 | .002562 | .002506 | -.043357 | -.063268 |
| 48 | -.005516 | .007469 | .000829 | -.000571 | -.040712 | -.042449 |
| 49 | -.008756 | .003295 | .004405 | -.005952 | -.037020 | -.024758 |
| 50 | -.008163 | .000654 | .008275 | -.013553 | -.031955 | -.009083 |
| 51 | -.002138 | .001357 | .004698 | -.020715 | -.031066 | .004362 |
| 52 | .004792 | .011056 | -.004946 | -.031077 | -.025947 | .011703 |
| 53 | .013681 | .022339 | -.012153 | -.033141 | -.018595 | .009887 |
| 54 | .017699 | .027011 | -.010482 | -.025980 | -.008746 | .014160 |
| 55 | .010285 | .018683 | -.000290 | -.020837 | .001850 | .020877 |
| 56 | .001064 | .005767 | .012339 | -.019482 | .016635 | .034125 |
| 57 | .002641 | .001924 | .022675 | -.017208 | .023100 | .038165 |
| 58 | .007546 | .002736 | .028313 | -.013372 | .017323 | .031277 |
| 59 | .012908 | -.005434 | .033220 | -.017894 | .014204 | .022536 |
| 60 | .010661 | -.018295 | .037958 | -.023579 | .023561 | .018187 |

RUN NO 908 46M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.84567 10E 00 | 0.62173 10E 00 | 0.49110 10E-01 | 0.62073 10E 00 | 0.49031 10E-01 | 0.36047 10E-01 |
| 1 | .009475 | -.020943 | -.028240 | .004681 | .020626 | -.022925 |
| 2 | .024243 | -.031304 | -.044618 | .013992 | .024904 | -.008945 |
| 3 | .037781 | -.035640 | -.057233 | .018268 | .025090 | .007133 |
| 4 | .050410 | -.040037 | -.076471 | .025323 | .022423 | .023448 |
| 5 | .059359 | -.045259 | -.088485 | .035011 | .013436 | .024893 |
| 6 | .064735 | -.049250 | -.095562 | .047999 | .003408 | .020747 |
| 7 | .064012 | -.054449 | -.101413 | .051524 | -.001673 | .015290 |
| 8 | .055762 | -.054127 | -.108495 | .052287 | -.004808 | .015117 |
| 9 | .039841 | -.047524 | -.118796 | .049057 | -.007592 | .022047 |
| 10 | .022312 | -.037052 | -.125641 | .046455 | -.006620 | .031679 |
| 11 | .010802 | -.026522 | -.133493 | .048978 | -.009733 | .042465 |
| 12 | .001824 | -.026167 | -.128030 | .042014 | -.012903 | .053821 |
| 13 | -.003378 | -.030488 | -.113141 | .018563 | .001139 | .062779 |
| 14 | .000345 | -.029186 | -.103833 | .002293 | .016594 | .063695 |
| 15 | .005777 | -.021210 | -.097765 | -.001992 | .030010 | .063096 |
| 16 | .006861 | -.005666 | -.099394 | .000805 | .030161 | .067848 |
| 17 | .010349 | .007299 | -.100109 | .006735 | .027873 | .067234 |
| 18 | .017474 | .009900 | -.095779 | .016775 | .023420 | .059008 |
| 19 | .025375 | .001376 | -.083647 | .023317 | .027776 | .049471 |
| 20 | .033502 | -.006384 | -.080170 | .023382 | .030665 | .043629 |
| 21 | .037843 | -.017691 | -.080770 | .019828 | .021793 | .042709 |
| 22 | .039376 | -.027941 | -.073426 | .023189 | .011292 | .037849 |
| 23 | .036880 | -.028443 | -.064406 | .025331 | .008906 | .036395 |
| 24 | .029971 | -.023878 | -.049041 | .0260 | .012395 | .038450 |
| 25 | .027159 | -.013044 | -.039019 | .02591* | .011943 | .041446 |
| 26 | .022846 | -.000143 | -.030765 | .022777 | .006382 | .040939 |
| 27 | .023635 | .010359 | -.025617 | .023452 | -.000904 | .033917 |
| 28 | .031735 | .013728 | -.015694 | .022452 | .000274 | .022153 |
| 29 | .042796 | .011510 | -.003149 | .023963 | .009461 | .000088 |
| 30 | .051643 | .003803 | .009729 | .022039 | .016122 | -.005004 |
| 31 | .054479 | -.004527 | .023192 | .020692 | .019533 | -.010113 |
| 32 | .042747 | -.011938 | .029101 | .012171 | .023056 | -.012666 |
| 33 | .031489 | -.021664 | .028797 | -.004618 | .028721 | -.021695 |
| 34 | .021263 | -.021750 | .019563 | -.016413 | .034381 | -.028541 |
| 35 | .013110 | -.017630 | .013416 | -.026438 | .040791 | -.040175 |
| 36 | .006146 | -.007415 | .008518 | -.025511 | .038620 | -.042974 |
| 37 | -.001189 | -.003281 | .000207 | -.012218 | .028807 | -.043384 |
| 38 | -.005033 | -.002355 | -.006068 | .007288 | .009687 | -.036841 |
| 39 | -.004744 | .008070 | -.010045 | .011749 | -.005640 | -.025929 |
| 40 | -.003503 | .011977 | -.010227 | .004730 | -.009511 | -.016064 |
| 41 | -.008011 | .011949 | -.010290 | -.001327 | -.014766 | -.015750 |
| 42 | -.016165 | .009999 | -.013287 | -.006649 | .024215 | -.014742 |
| 43 | -.029089 | .012993 | -.017633 | -.014061 | -.031417 | -.013692 |
| 44 | -.042742 | .017637 | -.017242 | -.024684 | -.030911 | -.008277 |
| 45 | -.055306 | .021857 | -.013094 | -.033372 | -.023710 | -.006274 |
| 46 | -.062687 | .025218 | -.009679 | -.046329 | -.014966 | -.007839 |
| 47 | -.069184 | .025537 | -.003717 | -.062712 | -.004803 | -.017174 |
| 48 | -.071689 | .024921 | .004785 | -.062349 | -.000444 | -.012939 |
| 49 | -.072134 | .027173 | .007746 | -.054043 | -.003763 | -.004836 |
| 50 | -.075367 | .029749 | .013612 | -.048268 | -.005959 | .001656 |
| 51 | -.074539 | .031336 | .018571 | -.042022 | -.005414 | .001588 |
| 52 | -.060320 | .026915 | .022870 | -.027357 | -.007993 | .010350 |
| 53 | -.034828 | .016020 | .028644 | -.007920 | -.008377 | .015969 |
| 54 | -.007357 | .009107 | .031917 | .008427 | -.005780 | .011785 |
| 55 | .011959 | .008375 | .035466 | .008424 | .003831 | .003547 |
| 56 | .024029 | .010073 | .034732 | .009674 | .014203 | .008085 |
| 57 | .025706 | .008530 | .032097 | .004576 | .021843 | .011905 |
| 58 | .023168 | .006528 | .028580 | .006724 | .015314 | .007501 |
| 59 | .021673 | .007393 | .023658 | .014755 | .006184 | .005688 |
| 60 | .025576 | .007296 | .024039 | .014328 | .008972 | .008494 |

RUN NC 90B 46M 6-18-63 1615-1714(EST)
 61 PCINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.84703 10E 00 | 0.84431 10E 00 | 0.45636 10E 00 | 0.28473 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .864488 | .804108 | .758765 | .769743 |
| 2 | .692093 | .557344 | .484276 | .539448 |
| 3 | .557320 | .381238 | .308507 | .388038 |
| 4 | .445701 | .251640 | .200005 | .291624 |
| 5 | .352144 | .150892 | .121201 | .222706 |
| 6 | .272037 | .073126 | .061108 | .172808 |
| 7 | .199929 | .016651 | .029105 | .124776 |
| 8 | .132458 | -.030051 | -.004073 | .074977 |
| 9 | .072725 | -.071927 | -.044926 | .043902 |
| 10 | .025402 | -.106391 | -.061018 | .019861 |
| 11 | -.011835 | -.122607 | -.068964 | -.007436 |
| 12 | -.048213 | -.128750 | -.085485 | -.026930 |
| 13 | -.081181 | -.135952 | -.109253 | -.037975 |
| 14 | -.109146 | -.152294 | -.131395 | -.055417 |
| 15 | -.139514 | -.163742 | -.152621 | -.082467 |
| 16 | -.169198 | -.164023 | -.160949 | -.115244 |
| 17 | -.189837 | -.167550 | -.156725 | -.139236 |
| 18 | -.200117 | -.173688 | -.149879 | -.152604 |
| 19 | -.208341 | -.180894 | -.158386 | -.156300 |
| 20 | -.218967 | -.187561 | -.151114 | -.159799 |
| 21 | -.234379 | -.189645 | -.155464 | -.184737 |
| 22 | -.257382 | -.191673 | -.157627 | -.212156 |
| 23 | -.274350 | -.204353 | -.164062 | -.221750 |
| 24 | -.279129 | -.222917 | -.182432 | -.223361 |
| 25 | -.272413 | -.223465 | -.187082 | -.216304 |
| 26 | -.260017 | -.204319 | -.189816 | -.200464 |
| 27 | -.243539 | -.172837 | -.182951 | -.178786 |
| 28 | -.226338 | -.138982 | -.163087 | -.155716 |
| 29 | -.204229 | -.107022 | -.142710 | -.145433 |
| 30 | -.175123 | -.068456 | -.106727 | -.134132 |
| 31 | -.136615 | -.017723 | -.070451 | -.103316 |
| 32 | -.104330 | 30868 | -.047624 | -.064423 |
| 33 | -.082088 | 55772 | -.027437 | -.028816 |
| 34 | -.067485 | .068292 | -.012670 | -.030622 |
| 35 | -.053768 | .076386 | -.003486 | -.021812 |
| 36 | -.042235 | .073379 | .002702 | -.013637 |
| 37 | -.030603 | .048841 | .010835 | -.005978 |
| 38 | -.013006 | .015356 | .024917 | -.002954 |
| 39 | .001559 | .004175 | .042931 | -.003047 |
| 40 | .010395 | .005719 | .042441 | -.012023 |
| 41 | .015993 | .023612 | .044783 | -.023476 |
| 42 | .021991 | .044791 | .061395 | -.026552 |
| 43 | .019937 | .052841 | .089866 | -.030806 |
| 44 | .013461 | .061613 | .092392 | -.031774 |
| 45 | .014679 | .071783 | .075579 | -.016040 |
| 46 | .013404 | .068929 | .067848 | -.010280 |
| 47 | .014409 | .063086 | .061723 | .013452 |
| 48 | .013999 | .055316 | .055163 | .001353 |
| 49 | .010291 | .047257 | .051567 | -.014096 |
| 50 | .003568 | .040882 | .044757 | -.039486 |
| 51 | .000138 | .030502 | .031530 | -.052181 |
| 52 | -.008354 | .021765 | .010950 | -.047031 |
| 53 | -.015050 | .008159 | -.014895 | -.027487 |
| 54 | -.021285 | -.001609 | -.032176 | -.027164 |
| 55 | -.030856 | .000643 | -.038458 | -.033363 |
| 56 | -.038307 | -.008802 | -.039808 | -.045478 |
| 57 | -.045501 | -.021949 | -.037334 | -.045764 |
| 58 | -.048226 | -.036912 | -.026033 | -.034081 |
| 59 | -.041893 | -.048954 | .002770 | -.032594 |
| 60 | -.035178 | -.065675 | .022434 | -.034272 |

RUN NO 90B 46M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .027960 | -.052031 | -.053365 | -.028030 | .016310 | .149430 |
| 1 | .391197 | -.464611 | -.332161 | -.526595 | .042619 | .657069 |
| 2 | .276727 | -.548494 | -.309942 | -.371721 | -.316568 | .055112 |
| 3 | -.394623 | -.532137 | -.264586 | .107801 | -.257154 | -.497143 |
| 4 | -.912021 | -.312526 | -.156361 | -.065888 | .398260 | -.516679 |
| 5 | -.342067 | -.183520 | -.078302 | -.581021 | .407644 | -.547716 |
| 6 | .460930 | -.168935 | -.062091 | -.446455 | .049743 | -.602640 |
| 7-8 | .400651 | -.101419 | -.074058 | -.203501 | -.142127 | -.623383 |
| 9-11 | .184187 | -.046595 | -.029505 | -.464511 | .095981 | -.489090 |
| 12-15 | .084444 | -.027100 | -.018909 | -.171105 | -.032751 | -.308531 |
| 16-20 | .013893 | -.015894 | -.020522 | -.065234 | -.107377 | -.280633 |
| 21-27 | .021041 | -.007540 | -.008438 | -.051755 | .017485 | -.181253 |
| 28-36 | .032764 | -.002963 | -.006098 | -.020878 | .012036 | -.109601 |
| 37-47 | -.005722 | -.002743 | -.002644 | -.011106 | -.000094 | -.051773 |
| 48-60 | .004720 | -.001528 | -.001600 | -.006933 | -.007607 | -.038125 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-01 | 10E-03 | 10E-03 |
| 1 | .194827 | -.857176 | -.288869 | .108711 | .622312 | .931016 |
| 2 | .128852 | -.831479 | -.244563 | .097347 | .276746 | .879901 |
| 3 | .023908 | -.699780 | -.187148 | .051990 | -.062450 | .433596 |
| 4 | .060132 | -.702529 | -.077183 | .042295 | -.041937 | -.174870 |
| 5 | .112749 | -.597032 | -.014541 | .056026 | -.027309 | -.194140 |
| 6 | .089374 | -.390825 | -.026419 | .048673 | -.116816 | -.049684 |
| 7-8 | .066710 | -.246920 | -.009925 | .001662 | .319847 | -.095244 |
| 9-11 | -.009576 | .022058 | .000873 | -.021364 | .196832 | .085804 |
| 12-15 | -.013333 | .008346 | -.008392 | .004095 | .035327 | -.047318 |
| 16-20 | .001734 | -.106878 | .002962 | -.004136 | .068743 | -.094366 |
| 21-27 | -.001077 | -.008332 | -.002780 | .004421 | .005193 | -.057086 |
| 28-36 | -.000903 | -.017048 | -.002918 | -.001515 | .011751 | -.022154 |
| 37-47 | -.001228 | -.001297 | -.000454 | -.001114 | .011817 | -.015432 |
| 48-60 | -.000425 | -.003686 | .000592 | -.001285 | .005300 | -.012483 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-00 | 10E-01 | 10E-03 |
| 0 | .017556 | .004670 | .022322 | .049416 |
| 1 | .134770 | .057842 | .319526 | .362440 |
| 2 | .152742 | .095285 | .502589 | .394132 |
| 3 | .147582 | .121552 | .578829 | .383307 |
| 4 | .086445 | .087944 | .382544 | .234372 |
| 5 | .049081 | .054835 | .274636 | .130890 |
| 6 | .044589 | .052701 | .274911 | .131051 |
| 7-8 | .035323 | .051155 | .273177 | .131200 |
| 9-11 | .018919 | .027112 | .162833 | .083625 |
| 12-15 | .011850 | .017634 | .111913 | .056757 |
| 16-20 | .008346 | .012368 | .080331 | .045336 |
| 21-27 | .004794 | .007349 | .049520 | .029135 |
| 28-36 | .003148 | .004814 | .035809 | .018216 |
| 37-47 | .001964 | .002845 | .018123 | .012796 |
| 48-60 | .001187 | .001660 | .012972 | .009594 |

RUN NO 908 46M 6-18-63 1615-1714(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.76296 10E 00 | 0.53551 10E 00 | 0.75031 10E-01 | 0.34507 10E 00 | 0.48349 10E-01 | 0.33935 10E-01 |
| 0 | .032453 | -.641404 | -.578811 | -.044960 | .088865 | .276241 |
| 1 | .084586 | -.358121 | -.452583 | -.039845 | .058290 | .335009 |
| 2 | .057606 | -.156688 | -.314584 | -.026797 | .082200 | .259105 |
| 3 | .001993 | -.023321 | -.193599 | .043239 | .049367 | .152630 |
| 4 | .008651 | .062596 | -.071654 | .045104 | .009014 | .052671 |
| 5 | -.020297 | .122525 | .007150 | .020432 | -.032151 | -.014721 |
| 6 | -.017608 | .106723 | .083838 | -.007699 | .008993 | -.051766 |
| 7 | -.039734 | .125360 | .116182 | -.000865 | -.008777 | -.100108 |
| 8 | -.001570 | .121047 | .137347 | .040538 | -.108205 | -.149034 |
| 9 | -.030200 | .155649 | .154373 | -.005901 | -.100495 | -.167156 |
| 10 | -.019847 | .084275 | .196402 | -.064919 | -.097053 | -.161777 |
| 11 | .030013 | .048462 | .193776 | -.010129 | -.100700 | -.157649 |
| 12 | .046434 | .051437 | .168261 | -.050397 | .085503 | -.153969 |
| 13 | .029212 | .056855 | .114455 | -.001402 | -.047032 | -.158681 |
| 14 | -.005440 | .053146 | .098139 | -.020986 | .019309 | -.135567 |
| 15 | -.065583 | .061047 | .086201 | -.003587 | .048311 | -.069667 |
| 16 | -.039916 | .081786 | .042863 | .031169 | .030375 | -.015523 |
| 17 | .017211 | .081581 | .048020 | .054305 | .022841 | -.000872 |
| 18 | .034439 | -.057940 | .039815 | -.003456 | .035905 | .035944 |
| 19 | .006982 | -.113871 | .042082 | -.004584 | .058980 | .048412 |
| 20 | .002428 | -.005889 | .047486 | -.038955 | .088547 | .033386 |
| 21 | -.004133 | .040018 | .032674 | -.026239 | .087701 | .012022 |
| 22 | -.008265 | .016183 | -.002040 | .034646 | .039428 | .040117 |
| 23 | -.069221 | -.032401 | -.018077 | .099612 | .077888 | .056152 |
| 24 | -.081846 | -.036902 | -.024212 | .111221 | .073487 | .046059 |
| 25 | -.035626 | -.032101 | .004137 | .035022 | .038592 | .012168 |
| 26 | .026161 | -.006600 | .013420 | -.005152 | -.036541 | .000500 |
| 27 | .007125 | -.019222 | -.025457 | -.077291 | .016288 | .024733 |
| 28 | .016862 | -.019197 | -.055612 | -.045869 | .001986 | .025866 |
| 29 | .021144 | -.086650 | -.071639 | .017766 | -.083603 | .031914 |
| 30 | -.010438 | -.058647 | -.105018 | .001082 | -.105797 | .026469 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .019130 | -.002189 | -.062702 | -.021094 | -.005579 | .003928 |
| 1 | .099903 | -.185816 | -.681991 | -.134244 | -.020420 | .162757 |
| 2 | .067500 | -.337282 | -.852755 | .068325 | .098135 | .288215 |
| 3 | .080470 | -.446488 | -.889840 | .091530 | .206892 | .340244 |
| 4 | .108273 | -.399805 | -.625424 | -.211813 | .114361 | .198673 |
| 5 | .105218 | -.343265 | -.356878 | -.421606 | -.001615 | .078036 |
| 6 | .097785 | -.300908 | -.209423 | -.514720 | -.036768 | .056712 |
| 7 | .007384 | -.208555 | -.189338 | -.154419 | -.012579 | .050265 |
| 8 | -.048416 | -.133775 | -.173660 | -.055992 | .037099 | .019170 |
| 9-11 | .031430 | -.149217 | -.067957 | -.260850 | .007722 | .007629 |
| 12-14 | -.018207 | -.066353 | -.053122 | -.008971 | -.029512 | -.020155 |
| 15-21 | -.032104 | -.068437 | -.031323 | .104348 | .010813 | -.013344 |
| 22-30 | -.026448 | -.058890 | -.030460 | -.018829 | .010167 | -.018493 |

RUN NO 908 46M 6-18-63 1615-1714(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.76296 10E 00 | 0.53551 10E 00 | 0.75031 10E-01 | 0.34507 10E 00 | 0.48349 10E-01 | 0.33935 10E-01 |
| 1 | .041138 | -.075457 | -.158730 | .064371 | .002727 | .069022 |
| 2 | -.003546 | -.052533 | -.232858 | .023812 | -.013122 | .120535 |
| 3 | -.028136 | -.074966 | -.234841 | .020262 | -.035137 | .100833 |
| 4 | -.083106 | -.058747 | -.231617 | -.044992 | -.063385 | .069907 |
| 5 | -.125775 | -.032881 | -.192458 | -.110707 | -.074708 | .053151 |
| 6 | -.109059 | -.045381 | -.141053 | -.049083 | -.085127 | .016915 |
| 7 | -.110203 | -.062661 | -.095705 | -.049693 | -.110102 | -.020889 |
| 8 | -.146382 | -.049204 | -.074455 | -.088051 | -.094545 | -.032244 |
| 9 | -.069821 | -.031503 | -.033130 | -.047034 | .001241 | -.038880 |
| 10 | .024729 | .021310 | -.008734 | .062341 | .076517 | .021328 |
| 11 | .109049 | -.018593 | .064562 | .088428 | .078805 | -.019756 |
| 12 | .107954 | -.028193 | .105416 | .063592 | .065950 | -.061108 |
| 13 | .089109 | -.003431 | .101860 | .080435 | .046333 | -.061609 |
| 14 | .102628 | .023708 | .115123 | .047058 | .036865 | -.042614 |
| 15 | .097569 | .093746 | .076920 | .082913 | .002915 | .024751 |
| 16 | .065159 | .059003 | .068161 | .043297 | .017342 | -.009336 |
| 17 | .029232 | .042477 | .063752 | .007494 | .004683 | -.007974 |
| 18 | -.018568 | .008815 | .062237 | -.049307 | -.019822 | -.038014 |
| 19 | -.021257 | -.019611 | .029252 | -.081338 | -.027970 | -.025780 |
| 20 | -.001517 | .002968 | -.027715 | -.042052 | -.031267 | .038181 |
| 21 | .052734 | -.009672 | -.050853 | -.014207 | -.037402 | .076590 |
| 22 | .009954 | -.015001 | -.041634 | -.004896 | -.069175 | .011736 |
| 23 | -.033353 | .009056 | -.059996 | -.044344 | -.071343 | -.000695 |
| 24 | -.073412 | .025763 | -.089967 | -.048721 | -.087186 | -.012442 |
| 25 | -.041078 | -.030623 | -.088112 | .015809 | -.043025 | -.027815 |
| 26 | -.058951 | -.027636 | -.082805 | -.070405 | -.019855 | -.012785 |
| 27 | -.096682 | -.027244 | -.074669 | -.039899 | -.049508 | .030909 |
| 28 | -.062790 | .002861 | -.055378 | .040178 | .023822 | .032406 |
| 29 | -.071751 | .011019 | -.032556 | .019339 | .048520 | .015745 |
| 30 | .015230 | -.029142 | -.002321 | .000665 | .076350 | -.038784 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-03 |
| 1 | -.012367 | -.064793 | -.165392 | .093531 | -.046813 | -.088794 |
| 2 | -.194344 | -.113336 | -.376982 | -.223600 | -.061426 | .241115 |
| 3 | -.370517 | -.142846 | -.653938 | -.910459 | -.154968 | .791472 |
| 4 | -.211687 | -.072598 | -.513171 | -.682416 | -.131183 | .967969 |
| 5 | .082933 | -.017328 | -.259088 | .389226 | -.007518 | .741014 |
| 6 | .224618 | -.042883 | -.170697 | .848667 | .073564 | .641674 |
| 7 | .145451 | -.057422 | -.141885 | .568336 | .095038 | .537261 |
| 8 | .035203 | -.013061 | -.136829 | .378318 | .043064 | .412556 |
| 9-11 | .011703 | -.044496 | -.052696 | .188026 | -.026244 | .031637 |
| 12-14 | .067750 | .008774 | -.033923 | .286127 | .027331 | .243882 |
| 15-21 | .008167 | -.019074 | -.020021 | .041685 | -.002452 | -.047105 |
| 22-30 | .018751 | -.019258 | .009115 | .083389 | .002018 | -.047121 |

RUN NO 908 46M 6-18-63 1615-1714(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.11840 10E 01 | 0.49164 10E 00 | 0.24220 10E 00 | 0.47548 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .626900 | .189800 | .262524 | .747945 |
| 2 | .326036 | -.019734 | -.018040 | .524019 |
| 3 | .119071 | -.013927 | -.052543 | .349598 |
| 4 | -.044532 | -.040373 | -.039777 | .200759 |
| 5 | -.140044 | -.048026 | -.104111 | .069061 |
| 6 | -.200068 | -.122751 | -.073532 | -.050276 |
| 7 | -.230259 | -.090666 | -.082458 | -.117009 |
| 8 | -.250973 | -.029969 | -.070014 | -.175330 |
| 9 | -.244651 | -.016023 | -.174849 | -.258624 |
| 10 | -.195249 | -.011735 | -.084055 | -.338264 |
| 11 | -.155698 | -.140253 | -.043033 | -.362102 |
| 12 | -.113955 | -.190048 | -.050693 | .351481 |
| 13 | -.061711 | -.086597 | -.087999 | -.272302 |
| 14 | -.069077 | -.121622 | -.061309 | -.198642 |
| 15 | -.078213 | -.076526 | -.071773 | -.147292 |
| 16 | -.041983 | -.035492 | -.100203 | -.091685 |
| 17 | -.059644 | .092205 | -.061461 | -.034952 |
| 18 | .009012 | .088599 | .156172 | -.011852 |
| 19 | .067831 | .038247 | .175927 | -.004538 |
| 20 | .024754 | .042362 | -.012457 | -.008859 |
| 21 | -.011594 | .084312 | .013032 | .012487 |
| 22 | .018379 | .038688 | .044222 | .020577 |
| 23 | .055893 | -.071894 | -.004731 | .053193 |
| 24 | .058440 | -.026179 | .013358 | .050643 |
| 25 | .009661 | .014448 | .053016 | .022315 |
| 26 | -.015189 | .043810 | -.009720 | -.034078 |
| 27 | .020385 | .101784 | -.026024 | -.065877 |
| 28 | .025728 | -.016388 | -.001634 | -.053276 |
| 29 | .083324 | .037516 | .040912 | -.042951 |
| 30 | .081816 | .012023 | -.023716 | .002995 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-03 |
| 0 | .006348 | .007519 | .001582 | .115572 |
| 1 | .087484 | .146605 | .064314 | .45087 |
| 2 | .138363 | .273775 | .134068 | .971666 |
| 3 | .183143 | .360285 | .190160 | .984107 |
| 4 | .161920 | .243825 | .152088 | .569437 |
| 5 | .122603 | .179272 | .128160 | .238537 |
| 6 | .088085 | .288227 | .146003 | .165756 |
| 7 | .059811 | .322239 | .122521 | .201576 |
| 8 | .046998 | .219753 | .092898 | .191572 |
| 9-11 | .040673 | .157753 | .126109 | .084320 |
| 12-14 | .023794 | .253052 | .092736 | .073569 |
| 15-21 | .018135 | .186604 | .094725 | .047272 |
| 22-30 | .016337 | .208479 | .081909 | .042236 |

RUN NO 908 91M 6-18-63 1615-1714(EST)

GROSS STATISTICS

CLEAR TRANSITIONAL WIND SPEED 8.60 M/SEC SIGMA A 6.20 DEG
WIND DIRECTION 242 DEG SIGMA E 4.9 DEG
SOLAR RAD. 0.50 LY/MIN

WITH NO WITH 301 POINT WITH 61 POINT 301 PT RUN MEAN
RUNNING MEAN RUNNING MEAN RUNNING MEAN 10 PT BLOCK AVG

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.15720E 01 | 0.11316E 01 | 0.70162E 00 | 0.78040E 00 |
| V | 0.78520E 00 | 0.75629E 00 | 0.68486E 00 | 0.36509E-00 |
| W | 0.45128E-00 | 0.44569E-00 | 0.39975E-00 | 0.17933E-00 |
| T | 0.72700E-01 | 0.11622E-01 | 0.10247E-01 | 0.71410E-02 |
| E | 0.14077E 01 | 0.11668E 01 | 0.89311E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.14579 | 0.12359 | 0.09740 | 0.10272 |
| V | 0.10304 | 0.10112 | 0.09623 | 0.07026 |
| W | 0.07872 | 0.07763 | 0.07352 | 0.04924 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.10102E-00 | 0.49032E-01 | 0.41534E-01 | 0.42346E-01 |
| U,W | -0.31044E-00 | -0.30119E-00 | -0.20316E-00 | -0.20465E-00 |
| U,T | -0.67920E-01 | 0.74513E-02 | 0.11081E-01 | 0.46083E-02 |
| V,W | -0.95265E-01 | -0.99220E-01 | -0.90469E-01 | -0.32846E-01 |
| V,T | 0.44199E-01 | 0.21110E-01 | 0.18521E-01 | 0.12247E-01 |
| W,T | -0.16866E-01 | -0.22743E-01 | -0.24708E-01 | -0.79055E-02 |
| WE | 0.23076E-00 | 0.15696E-00 | 0.79997E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.09093 | 0.05300 | 0.05992 | 0.07933 |
| U,W | -0.36575 | -0.42412 | -0.38361 | -0.54705 |
| U,T | -0.20091 | 0.06497 | 0.13068 | 0.06173 |
| V,W | -0.15881 | -0.17090 | -0.17290 | -0.12837 |
| V,T | 0.18499 | 0.22516 | 0.22108 | 0.23985 |
| W,T | -0.09240 | -0.31600 | -0.38605 | -0.22092 |

RUN NO 908 91M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.69329 10E 00 | 0.52964 10E 00 | 0.84805 10E-01 | 0.52333 10E 00 | 0.83795 10E-01 | 0.64015 10E-01 |
| 0 | .060089 | -.383482 | .130992 | -.172766 | .220947 | -.386048 |
| 1 | .061343 | -.343229 | .131960 | -.137550 | .192009 | -.314467 |
| 2 | .053516 | -.279829 | .121514 | -.074588 | .144642 | -.217725 |
| 3 | .044411 | -.217912 | .104662 | -.033623 | .110666 | -.147280 |
| 4 | .036635 | -.159421 | .031807 | -.010455 | .083293 | -.187903 |
| 5 | .028181 | -.115983 | .058833 | .012864 | .054845 | -.038339 |
| 6 | .019573 | -.083625 | .038466 | .029159 | .029909 | -.005371 |
| 7 | .017014 | -.060573 | .021237 | .042501 | -.000493 | .019479 |
| 8 | .016473 | -.038223 | .006143 | .049028 | -.022130 | .034100 |
| 9 | .014990 | -.016736 | -.007168 | .042027 | -.031256 | .049323 |
| 10 | .011182 | -.001723 | -.018500 | .028648 | -.034520 | .068241 |
| 11 | .011263 | .010987 | -.031484 | .014475 | -.031765 | .082114 |
| 12 | .011216 | .030126 | -.045297 | .009755 | -.025092 | .091825 |
| 13 | .005079 | .056986 | -.054718 | .004146 | -.016574 | .100208 |
| 14 | -.007846 | .079346 | -.060444 | .001864 | -.007338 | .096616 |
| 15 | -.014503 | .090798 | -.064594 | .002202 | -.002922 | .091097 |
| 16 | -.018554 | .096506 | -.066256 | .002290 | .000465 | .092822 |
| 17 | -.019897 | .103662 | -.066963 | .004817 | -.003835 | .098487 |
| 18 | -.015889 | .104209 | -.065751 | .005631 | -.012107 | .104054 |
| 19 | -.013054 | .104575 | -.067774 | .001157 | -.018218 | .102033 |
| 20 | -.013127 | .104860 | -.070132 | -.006395 | -.026162 | .093000 |
| 21 | -.017155 | .106072 | -.068601 | -.007691 | -.036614 | .084997 |
| 22 | -.021953 | .102715 | -.063987 | -.005064 | -.044364 | .079796 |
| 23 | -.025556 | .092499 | -.055752 | -.001593 | -.050518 | .074216 |
| 24 | -.028177 | .082976 | -.050580 | .006506 | -.056665 | .069101 |
| 25 | -.025404 | .076493 | -.048632 | .020208 | -.064821 | .064165 |
| 26 | -.022213 | .066010 | -.041062 | .028714 | -.075363 | .050012 |
| 27 | -.020165 | .058906 | -.034100 | .036394 | -.083094 | .036735 |
| 28 | -.023856 | .053123 | -.030817 | .041938 | -.084148 | .022297 |
| 29 | -.030422 | .043750 | -.023130 | .050352 | -.077344 | .005487 |
| 30 | -.036684 | .032029 | -.013470 | .044755 | -.065856 | -.011069 |
| 31 | -.048456 | .021583 | -.007472 | .032526 | -.053466 | -.026080 |
| 32 | -.053111 | .011802 | -.001208 | .017055 | -.043604 | -.035467 |
| 33 | -.052075 | -.000658 | .008217 | .012973 | -.039526 | -.040465 |
| 34 | -.051779 | -.008269 | .019123 | .014558 | -.034485 | -.046098 |
| 35 | -.045822 | -.006597 | .029235 | .004430 | -.024208 | -.057165 |
| 36 | -.034400 | .002525 | .037713 | -.006189 | -.012435 | -.069340 |
| 37 | -.019211 | .004208 | .048888 | -.009427 | -.005717 | -.078457 |
| 38 | -.006521 | -.001907 | .062012 | -.003251 | -.005677 | -.082229 |
| 39 | .002834 | -.004660 | .065957 | -.002630 | -.008166 | -.079171 |
| 40 | .015293 | -.009962 | .065314 | -.006429 | -.010555 | -.080364 |
| 41 | .032002 | -.014547 | .069635 | -.020574 | -.013000 | -.084637 |
| 42 | .045471 | -.016523 | .073490 | -.025062 | -.016537 | -.085427 |
| 43 | .053457 | -.018488 | .073363 | -.031761 | -.015660 | -.080789 |
| 44 | .050204 | -.012430 | .070803 | -.044509 | -.009024 | -.067042 |
| 45 | .038430 | -.003124 | .065462 | -.043301 | .000180 | -.053444 |
| 46 | .029545 | .001896 | .054499 | -.025199 | .009417 | -.034360 |
| 47 | .020333 | .008666 | .040672 | -.010323 | .016666 | -.018195 |
| 48 | .005836 | .020083 | .029623 | -.003524 | .018292 | -.007943 |
| 49 | -.004619 | .028066 | .022632 | .001833 | .019915 | .007884 |
| 50 | -.007577 | .028891 | .015468 | .010747 | .026284 | .020495 |
| 51 | -.007067 | .031793 | .006915 | .012048 | .040975 | .027215 |
| 52 | -.007688 | .029539 | -.000795 | .003321 | .053179 | .030775 |
| 53 | -.006315 | .030362 | -.003971 | -.013895 | .059577 | .037306 |
| 54 | -.005415 | .036547 | -.013502 | -.034375 | .059478 | .042964 |
| 55 | -.004045 | .042257 | -.025103 | -.042947 | .060503 | .047573 |
| 56 | .002623 | .047121 | -.036863 | -.045660 | .067563 | .045888 |
| 57 | .014311 | .045211 | -.039737 | -.039250 | .074635 | .039102 |
| 58 | .021547 | .040262 | -.035171 | -.024279 | .073785 | .031901 |
| 59 | .022246 | .031846 | -.026039 | .000258 | .070899 | .036062 |
| 60 | .021595 | .023994 | -.020302 | .012464 | .068331 | .032202 |

RUN NO 908 91M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.69329 10E 00 | 0.52964 10E 00 | 0.84805 10E-01 | 0.52333 10E 00 | 0.83795 10E-01 | 0.64015 10E-01 |
| 1 | .007139 | -.014572 | .011493 | -.014559 | .035648 | -.035877 |
| 2 | .005287 | -.020715 | .021656 | -.029657 | .046352 | -.034966 |
| 3 | .002603 | -.015548 | .027301 | -.039613 | .048617 | -.027442 |
| 4 | -.003173 | -.016064 | .029231 | -.039986 | .052149 | -.025128 |
| 5 | -.011159 | -.019559 | .028572 | -.039382 | .055515 | -.016908 |
| 6 | -.015652 | -.025586 | .028860 | -.032528 | .057502 | -.004935 |
| 7 | -.025595 | -.03375 | .032487 | -.033484 | .061473 | -.002454 |
| 8 | -.041534 | -.038514 | .031731 | -.043575 | .066152 | -.003183 |
| 9 | -.054075 | -.042627 | .031303 | -.056969 | .072999 | -.002847 |
| 10 | -.063333 | -.040733 | .027082 | -.067509 | .083097 | .001828 |
| 11 | -.069339 | -.042385 | .020876 | -.065102 | .087210 | .006618 |
| 12 | -.068206 | -.050108 | .017367 | -.063281 | .087004 | .008045 |
| 13 | -.068111 | -.053602 | .011976 | -.068443 | .088164 | .014203 |
| 14 | -.070354 | -.047679 | .002668 | -.067812 | .086163 | .017250 |
| 15 | -.075385 | -.039930 | -.007060 | -.063496 | .078197 | .018077 |
| 16 | -.074435 | -.034968 | -.014924 | -.060886 | .069117 | .018961 |
| 17 | -.065407 | -.033113 | -.016142 | -.049342 | .056636 | .017038 |
| 18 | -.051721 | -.030359 | -.017431 | -.030334 | .044299 | .017453 |
| 19 | -.034008 | -.020411 | -.021633 | -.020552 | .032135 | .019067 |
| 20 | -.014071 | -.012330 | -.022420 | -.011350 | .016008 | .010945 |
| 21 | .004976 | -.006342 | -.021839 | .006131 | -.005033 | .007404 |
| 22 | .020416 | .001507 | -.021320 | .020297 | -.025068 | .008617 |
| 23 | .028357 | .005576 | -.026665 | .035114 | -.047071 | .016109 |
| 24 | .038804 | .007527 | -.038475 | .052871 | -.059578 | .017796 |
| 25 | .048127 | .007192 | -.048355 | .065685 | -.066186 | .017997 |
| 26 | .054249 | .006332 | -.056545 | .068447 | -.070710 | .020534 |
| 27 | .056540 | .003937 | -.059659 | .064926 | -.070940 | .019070 |
| 28 | .057438 | .003270 | -.056345 | .061779 | -.065959 | .015234 |
| 29 | .056270 | .000491 | -.049550 | .062076 | -.059245 | .008420 |
| 30 | .050863 | .001666 | -.045444 | .055816 | -.048806 | .000715 |
| 31 | .051542 | .004358 | -.038160 | .048712 | -.043217 | -.003360 |
| 32 | .052814 | .007052 | -.030796 | .047962 | -.043530 | -.002808 |
| 33 | .050977 | .002368 | -.023098 | .047799 | -.037602 | -.001963 |
| 34 | .051133 | .001487 | -.015310 | .050719 | -.033853 | .000501 |
| 35 | .049564 | .010857 | -.007254 | .055169 | -.032006 | .001544 |
| 36 | .046817 | .024939 | -.001443 | .057390 | -.029939 | .001479 |
| 37 | .041615 | .032579 | .001264 | .054491 | -.024565 | .004252 |
| 38 | .036659 | .031179 | .003125 | .049138 | -.020467 | .008354 |
| 39 | .031951 | .029732 | .002329 | .041022 | -.018253 | .012858 |
| 40 | .035354 | .021600 | -.000019 | .041822 | -.015476 | .012772 |
| 41 | .034298 | .013642 | -.000857 | .043218 | -.012013 | .006792 |
| 42 | .022846 | .008464 | -.006590 | .028004 | -.001583 | .005600 |
| 43 | .000839 | .009447 | -.016116 | .003724 | .011912 | .001645 |
| 44 | -.022784 | .017164 | -.018187 | -.020916 | .028486 | -.011839 |
| 45 | -.042077 | .019072 | -.016810 | -.044643 | .041147 | -.021527 |
| 46 | -.055259 | .021472 | -.016586 | -.072989 | .049585 | -.018694 |
| 47 | -.068024 | .017930 | -.009370 | -.091678 | .050058 | -.010560 |
| 48 | -.077951 | .011602 | .000631 | -.097701 | .045375 | -.001903 |
| 49 | -.077649 | .003289 | .008284 | -.083841 | .033830 | .003080 |
| 50 | -.076326 | -.007622 | .017341 | -.065069 | .017627 | .005204 |
| 51 | -.070333 | -.014949 | .022986 | -.046106 | .002101 | .005255 |
| 52 | -.062899 | -.020127 | .025709 | -.037835 | -.007055 | .002359 |
| 53 | -.055772 | -.023864 | .032502 | -.034643 | -.010084 | .000976 |
| 54 | -.053379 | -.020000 | .038060 | -.036191 | -.008567 | -.001588 |
| 55 | -.046115 | -.011341 | .040222 | -.039545 | -.006689 | -.005594 |
| 56 | -.035452 | -.000190 | .038763 | -.038581 | -.005412 | -.008451 |
| 57 | -.024033 | .008809 | .038574 | -.033397 | -.002389 | -.018103 |
| 58 | -.010920 | .013875 | .038190 | -.033378 | .005050 | -.025118 |
| 59 | .002687 | .010926 | .041770 | -.035483 | .013833 | -.027617 |
| 60 | .016736 | .005140 | .045842 | -.027851 | .016338 | -.028027 |

RUN NO 908 91M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.70166 10E 00 | 0.58503 10E 00 | 0.39980 10E 00 | 0.10250 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .859545 | .805974 | .728707 | .869731 |
| 2 | .671734 | .557650 | .439697 | .685685 |
| 3 | .517137 | .366456 | .258829 | .530975 |
| 4 | .389639 | .225802 | .128286 | .401767 |
| 5 | .282912 | .125560 | .041562 | .287241 |
| 6 | .199677 | .041915 | .003763 | .192882 |
| 7 | .143957 | -.028050 | -.014100 | .113119 |
| 8 | .093179 | -.079957 | -.026768 | .048417 |
| 9 | .039778 | -.108057 | -.045019 | -.007875 |
| 10 | -.007321 | -.130561 | -.067888 | -.056858 |
| 11 | -.046062 | -.140311 | -.089545 | -.098515 |
| 12 | -.077401 | -.144769 | -.117092 | -.132840 |
| 13 | -.102864 | -.140610 | -.140773 | -.162035 |
| 14 | -.124182 | -.126813 | -.153682 | -.186343 |
| 15 | -.144768 | -.115693 | -.164521 | -.208486 |
| 16 | -.168807 | -.120320 | -.166684 | -.235677 |
| 17 | -.198638 | -.130605 | -.161621 | -.266189 |
| 18 | -.215099 | -.142390 | -.152470 | -.290268 |
| 19 | -.222624 | -.157996 | -.138629 | -.309468 |
| 20 | -.223929 | -.177038 | -.118917 | -.325357 |
| 21 | -.225743 | -.186056 | -.115480 | -.332745 |
| 22 | -.224312 | -.188201 | -.123575 | -.331631 |
| 23 | -.216225 | -.189717 | -.122119 | -.318971 |
| 24 | -.203860 | -.182396 | -.12/541 | -.299831 |
| 25 | -.196885 | -.180288 | -.125079 | -.282910 |
| 26 | -.188647 | -.180940 | -.105573 | -.262810 |
| 27 | -.177543 | -.167533 | -.085900 | -.239833 |
| 28 | -.171697 | -.142188 | -.075663 | -.211031 |
| 29 | -.166959 | -.110437 | -.058379 | -.171100 |
| 30 | -.150219 | -.075322 | -.033648 | -.123991 |
| 31 | -.132386 | -.042087 | -.014633 | -.073027 |
| 32 | -.126509 | -.009247 | -.008179 | -.031780 |
| 33 | -.121223 | .018387 | -.006671 | .007094 |
| 34 | -.105918 | .036313 | .001823 | .046881 |
| 35 | -.092991 | .040703 | .017363 | .083381 |
| 36 | -.086338 | .042516 | .019956 | .114340 |
| 37 | -.076466 | .042181 | .019457 | .132082 |
| 38 | -.065146 | .031908 | .035418 | .133565 |
| 39 | -.048957 | .028327 | .055231 | .129261 |
| 40 | -.035595 | .018266 | .080465 | .125831 |
| 41 | -.032576 | .012738 | .102633 | .118324 |
| 42 | -.036263 | .013854 | .100688 | .109600 |
| 43 | -.034286 | .020016 | .092378 | .098330 |
| 44 | -.026355 | .023737 | .070728 | .084220 |
| 45 | -.011125 | .031292 | .039017 | .073013 |
| 46 | -.001602 | .031508 | .016233 | .065344 |
| 47 | -.002953 | .026016 | .002496 | .059007 |
| 48 | -.011492 | .030262 | .007394 | .046683 |
| 49 | -.014306 | .028907 | -.001911 | .031179 |
| 50 | -.011368 | .026881 | -.020912 | .019352 |
| 51 | -.010370 | .034210 | -.035949 | .010419 |
| 52 | -.007965 | .052668 | -.035042 | -.000655 |
| 53 | -.007134 | .066536 | -.027662 | -.013682 |
| 54 | -.004097 | .068727 | -.017457 | -.029936 |
| 55 | .009530 | .066391 | -.019123 | -.040095 |
| 56 | .023086 | .053134 | -.026874 | -.039681 |
| 57 | .035324 | .039748 | -.031583 | -.030457 |
| 58 | .044355 | .042782 | -.037633 | -.023388 |
| 59 | .060616 | .045758 | -.044574 | -.020462 |
| 60 | .069990 | .047494 | -.042050 | -.017666 |

RUN NO 908 91M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 0 | .004817 | -.034325 | .001704 | -.000123 | .006209 | .000578 |
| 1 | .092692 | -.267844 | .041773 | -.028577 | .218986 | -.034375 |
| 2 | .128063 | -.327132 | .212632 | -.058702 | .300788 | -.267698 |
| 3 | .090226 | -.377390 | .356055 | -.058542 | .243966 | -.411918 |
| 4 | .012683 | -.268892 | .214324 | -.034226 | .126633 | -.327265 |
| 5 | .034647 | -.144309 | .103360 | -.068325 | .133549 | -.194315 |
| 6 | .034220 | -.096662 | .087546 | -.104335 | .191460 | -.178735 |
| 7-8 | -.000298 | -.077816 | .036466 | -.073303 | .151462 | -.139692 |
| 9-11 | .016900 | -.063132 | .018410 | -.058057 | .046887 | -.087527 |
| 12-15 | .004804 | -.035843 | .008716 | -.017640 | .014809 | -.057681 |
| 16-20 | .001663 | -.014052 | -.003912 | -.016346 | .019967 | -.030735 |
| 21-27 | -.001258 | -.005978 | -.001420 | -.013727 | .015064 | -.019753 |
| 28-36 | .000243 | -.005080 | -.001176 | -.005918 | .006325 | -.013892 |
| 37-47 | -.001140 | -.003287 | -.000983 | -.001183 | .003684 | -.008175 |
| 48-60 | -.000916 | -.001518 | -.001497 | -.000033 | .000595 | -.003527 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-01 | 10E-02 | 10E-03 |
| 1 | -.020644 | -.634777 | -.119307 | .005904 | .071675 | .522157 |
| 2 | -.135135 | -.880796 | .009861 | -.100567 | .209254 | .233381 |
| 3 | -.204817 | -.799584 | .125983 | -.172906 | .323856 | -.117812 |
| 4 | -.050508 | -.366309 | .117400 | -.066948 | .179414 | -.322013 |
| 5 | .060689 | -.114786 | .042665 | .012534 | -.003772 | -.350990 |
| 6 | .074272 | .130487 | .009519 | .025338 | -.048141 | -.289213 |
| 7-8 | .033758 | .108597 | .029256 | .001055 | .007699 | -.271624 |
| 9-11 | .004956 | -.041162 | -.007142 | -.013080 | .025896 | -.136095 |
| 12-15 | .004686 | -.049705 | .009351 | -.010438 | .020595 | -.189668 |
| 16-20 | .000519 | -.044442 | .003550 | -.003460 | .009520 | -.112417 |
| 21-27 | .002704 | -.028135 | -.000528 | .003475 | .007331 | -.047775 |
| 28-36 | .000132 | -.018694 | -.000050 | .000653 | .004650 | -.080853 |
| 37-47 | .002008 | .005019 | -.000102 | .000382 | .002028 | -.022157 |
| 48-60 | -.000152 | .004259 | .000226 | -.000791 | .000464 | -.005748 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .009785 | .024248 | .018344 | .006748 |
| 1 | .098520 | .438451 | .197138 | .095071 |
| 2 | .114785 | .726661 | .328862 | .163373 |
| 3 | .110519 | .901889 | .448818 | .205011 |
| 4 | .075067 | .677066 | .356147 | .126753 |
| 5 | .050021 | .473972 | .261681 | .059445 |
| 6 | .037943 | .489827 | .237038 | .057519 |
| 7-8 | .029508 | .458457 | .185683 | .050201 |
| 9-11 | .020600 | .236381 | .157668 | .028509 |
| 12-15 | .011936 | .145697 | .123038 | .015460 |
| 16-20 | .007021 | .096634 | .070680 | .009307 |
| 21-27 | .003755 | .063388 | .043825 | .005662 |
| 28-36 | .002827 | .032334 | .034576 | .003506 |
| 37-47 | .001473 | .022560 | .021134 | .001997 |
| 48-60 | .001001 | .014235 | .013442 | .001187 |

RUN NO 908 91M 6-18-63 1615-1714(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|----------|----------|----------|----------|----------|----------|
| | 0.53383 | 0.37403 | 0.74672 | 0.25572 | 0.51051 | 0.35769 |
| | 10E 00 | 10E 00 | 10E-01 | 10E 00 | 10E-01 | 10E-01 |
| 0 | .079325 | -.547142 | .061714 | -.128448 | .239889 | -.221013 |
| 1 | .020582 | -.297377 | -.018984 | .014112 | .066052 | .049454 |
| 2 | -.006080 | -.069502 | -.069020 | -.023047 | .006888 | .071632 |
| 3 | -.033913 | -.019465 | -.019759 | .034200 | -.036702 | -.016698 |
| 4 | .017032 | .037609 | .031755 | -.038923 | -.054814 | -.071588 |
| 5 | .013062 | .121233 | -.022138 | -.045113 | -.002360 | .011674 |
| 6 | .041167 | .111354 | -.068762 | -.008683 | .021432 | .041400 |
| 7 | .017922 | .057259 | -.054374 | .057053 | -.075565 | .022618 |
| 8 | .028808 | .032778 | -.071681 | .021651 | -.117395 | .080194 |
| 9 | .073587 | -.003910 | -.025584 | -.030606 | -.047118 | .037067 |
| 10 | .008752 | .047861 | .028152 | .002191 | -.018557 | .013077 |
| 11 | -.018144 | .002600 | .069076 | .063795 | -.007866 | -.044155 |
| 12 | .006248 | .029970 | .032551 | -.009436 | .013322 | .021626 |
| 13 | -.013615 | .061322 | .030933 | -.074531 | -.011840 | -.038653 |
| 14 | .017288 | .061193 | .035704 | .011196 | .027668 | -.049264 |
| 15 | .030374 | .111694 | -.012383 | -.006189 | .093607 | -.007356 |
| 16 | -.033980 | .185350 | -.050100 | .031488 | .008145 | .061330 |
| 17 | -.097111 | .165209 | -.034001 | .052439 | -.018875 | .057043 |
| 18 | -.047560 | .064367 | .056008 | -.027372 | .042639 | -.051914 |
| 19 | -.058983 | -.023789 | .092240 | .046521 | -.074987 | -.062958 |
| 20 | -.123975 | .001759 | .005634 | .077156 | .060467 | .001993 |
| 21 | -.156776 | .049409 | -.032982 | .070646 | .045168 | -.000848 |
| 22 | -.078225 | -.029264 | -.008977 | .020436 | .018079 | -.073159 |
| 23 | -.031432 | -.015569 | .019344 | .059079 | -.024311 | -.015866 |
| 24 | .065972 | -.039373 | .078316 | -.012867 | -.038479 | .004011 |
| 25 | .087374 | -.116215 | .055920 | -.017807 | -.013639 | -.054247 |
| 26 | .038669 | -.031096 | -.046816 | -.049227 | -.016493 | .018499 |
| 27 | .056705 | -.053619 | -.041352 | -.065150 | -.056526 | .060297 |
| 28 | .082331 | -.100706 | .022786 | -.020323 | -.003976 | .024195 |
| 29 | .089174 | -.096969 | .040695 | -.026871 | .022623 | -.014503 |
| 30 | .058971 | -.112153 | .006388 | -.035590 | -.066530 | -.031357 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-03 |
| 0 | .008499 | .000225 | -.028025 | -.006197 | .002603 | .031994 |
| 1 | .112509 | -.149667 | -.141422 | -.288575 | -.021427 | .198306 |
| 2 | .046832 | -.211989 | -.078506 | -.207238 | .019384 | -.040348 |
| 3 | -.066065 | -.175045 | -.004397 | -.052399 | .125211 | -.323322 |
| 4 | -.019483 | -.147672 | .065441 | -.200491 | .142311 | -.363131 |
| 5 | .020505 | -.223665 | .106815 | -.151377 | .087001 | -.357333 |
| 6 | -.011380 | -.25950 | .058415 | .090325 | .053944 | -.047720 |
| 7 | .047663 | -.143220 | -.060797 | .074418 | .021521 | .401795 |
| 8 | .061663 | -.095707 | -.119949 | .010730 | .042734 | .302538 |
| 9-11 | .019285 | -.069208 | .021142 | -.107409 | .094585 | -.215350 |
| 12-14 | .048256 | -.065611 | .085341 | -.404796 | .058254 | -.605932 |
| 15-21 | .010714 | -.063152 | .052646 | .005016 | .031410 | -.646302 |
| 22-30 | .008875 | -.017683 | .012746 | -.299604 | .040910 | -.477424 |

RUN NO 90B 91M 6-18-63 1615-1714(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 0.53383 10E 00 | 0.37403 10E 00 | 0.74672 10E-01 | 0.25572 10E 00 | 0.51051 10E-01 | 0.35769 10E-01 |
| 1 | -.045867 | -.048685 | .015034 | -.068398 | .111965 | .017442 |
| 2 | .009402 | -.017543 | -.032256 | .047836 | .055284 | .020916 |
| 3 | .065614 | -.005772 | -.027316 | .082893 | .019623 | .029918 |
| 4 | .032870 | .038851 | .032840 | .013453 | .066759 | -.011287 |
| 5 | .00374 | .020914 | .073178 | -.057836 | .068289 | -.037318 |
| 6 | .066022 | .034750 | .136851 | -.008011 | .046638 | -.082007 |
| 7 | .053709 | .031859 | .119336 | .012884 | .072697 | -.053085 |
| 8 | .076474 | .005242 | .049555 | .067380 | -.010210 | -.022627 |
| 9 | .006780 | .004244 | .009884 | .029160 | -.051623 | -.021686 |
| 10 | -.030126 | .034069 | -.029538 | .015107 | .030643 | -.008909 |
| 11 | -.045548 | .046314 | -.049451 | .073030 | -.048842 | .053206 |
| 12 | -.043851 | -.017909 | -.029918 | .068134 | -.035122 | .086880 |
| 13 | .015577 | -.012100 | -.021399 | -.003759 | .005083 | .011078 |
| 14 | -.021478 | -.052350 | -.039351 | .013786 | -.063771 | -.043454 |
| 15 | -.047304 | -.049461 | -.053418 | -.020675 | -.065227 | -.110239 |
| 16 | -.041142 | -.052093 | .011070 | -.072223 | -.006046 | -.083186 |
| 17 | -.042584 | -.007043 | .001988 | -.053350 | -.050874 | -.009318 |
| 18 | -.007128 | .017419 | -.056626 | .004718 | -.018068 | .004123 |
| 19 | -.063872 | -.013963 | -.102242 | -.037034 | .075451 | .069033 |
| 20 | -.051634 | -.033682 | -.137484 | .001931 | .091590 | .069925 |
| 21 | -.004518 | -.004485 | -.154195 | -.051410 | .072799 | .105573 |
| 22 | .099008 | -.025294 | -.134888 | -.042767 | .033622 | .067058 |
| 23 | .047814 | -.040410 | -.025734 | -.075130 | .034432 | -.043596 |
| 24 | .057015 | -.031715 | .050386 | -.010569 | -.082317 | -.057763 |
| 25 | -.014417 | .012853 | .054350 | -.040636 | -.038754 | -.052275 |
| 26 | -.003557 | .033136 | -.014835 | .013957 | -.079144 | -.034538 |
| 27 | -.020698 | .066880 | -.024921 | -.017930 | -.076455 | .032912 |
| 28 | -.040247 | .024248 | -.000173 | .037617 | -.014820 | .038236 |
| 29 | -.030071 | -.008429 | -.032050 | -.019066 | .038522 | .068024 |
| 30 | .016571 | -.047526 | -.031052 | -.045145 | .022522 | .042477 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | -.000245 | -.004999 | -.023015 | .226299 | .022201 | -.034312 |
| 2 | .065305 | .355613 | .185027 | .382360 | .052752 | -.035037 |
| 3 | .115237 | .383049 | .185114 | .116204 | .130713 | -.016872 |
| 4 | .049465 | -.022064 | .058976 | -.213136 | .130604 | -.016722 |
| 5 | -.007668 | -.298666 | .003286 | -.102304 | .031308 | -.021787 |
| 6 | -.022309 | -.247377 | -.161309 | .196266 | .032180 | .064282 |
| 7 | -.059349 | .005375 | -.208042 | .351459 | .034671 | .100639 |
| 8 | -.025013 | -.168961 | -.078383 | .161823 | -.019113 | .010390 |
| 9-11 | .021466 | -.330379 | .011355 | .068875 | .030613 | .003515 |
| 12-14 | -.060000 | -.070523 | .03574 | -.375035 | .057084 | -.020305 |
| 15-21 | -.031811 | -.070347 | .029152 | -.277327 | .049593 | .002011 |
| 22-30 | -.001349 | -.127211 | .000907 | -.071168 | -.007374 | .008103 |

RUN NO 908 91M 6-18-63 1615 1711 (EST)
301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.78082 10E 00 | 0.36497 10E 00 | 0.17917 10E 00 | 0.71411 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .550244 | .146554 | .175338 | .418210 |
| 2 | .242927 | -.047052 | .011082 | .013777 |
| 3 | .073850 | .048936 | -.049948 | .017609 |
| 4 | -.027714 | -.093491 | .014705 | .021048 |
| 5 | -.083080 | -.084367 | -.109027 | |
| 6 | -.068942 | -.022283 | -.131194 | -.019055 |
| 7 | -.098429 | -.139276 | -.066339 | -.040999 |
| 8 | -.116347 | -.066130 | -.007769 | -.032187 |
| 9 | -.152299 | .014651 | .023093 | -.028390 |
| 10 | -.167573 | -.127372 | -.047664 | -.001551 |
| 11 | -.146961 | -.215324 | .041260 | .002935 |
| 12 | -.160336 | -.073707 | -.104426 | -.113315 |
| 13 | -.122810 | -.045273 | -.024700 | .198806 |
| 14 | -.117385 | .007014 | -.039885 | -.128881 |
| 15 | -.130087 | .050863 | -.133979 | -.077578 |
| 16 | -.138037 | .07376 | -.183395 | -.075768 |
| 17 | -.123994 | .065432 | -.164347 | .013171 |
| 18 | -.036221 | .133651 | -.015186 | .082939 |
| 19 | .041930 | .021669 | .043419 | .010705 |
| 20 | .040893 | -.003015 | -.004466 | |
| 21 | .050059 | .030089 | -.066418 | -.067625 |
| 22 | .054416 | -.029840 | .029201 | -.040951 |
| 23 | .056393 | -.079394 | .005804 | .008621 |
| 24 | .046844 | -.018568 | -.049182 | -.053516 |
| 25 | .016568 | -.012878 | .125657 | -.041030 |
| 26 | -.002649 | .020599 | .043550 | -.042340 |
| 27 | .028212 | .044536 | .048599 | -.032495 |
| 28 | .063496 | -.082190 | .013484 | .086755 |
| 29 | .050393 | -.041164 | .015451 | .095324 |
| 30 | -.009370 | -.150575 | .084600 | .007851 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-03 |
| 0 | .074341 | .002505 | .003821 | .114915 |
| 1 | .712937 | .047892 | .081236 | .644737 |
| 2 | .932953 | .125277 | .101925 | .582477 |
| 3 | .984115 | .250259 | .086867 | .550196 |
| 4 | .686609 | .238681 | .076348 | .395827 |
| 5 | .580204 | .126444 | .112514 | .342619 |
| 6 | .551535 | .135859 | .124378 | .480637 |
| 7 | .439251 | .217791 | .089755 | .492374 |
| 8 | .412732 | .217273 | .063771 | .313219 |
| 9-11 | .327095 | .144986 | .058980 | .328815 |
| 12-14 | .194385 | .183661 | .083359 | .315048 |
| 15 | .159669 | .153520 | .070592 | .250626 |
| 16 | .132085 | .152214 | .079983 | .124436 |

RUN NO 908 46M 6-18-63 161F-1714(EST)
 RUN NO 908 91M 6-18-63 1615-1714(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .570848 | .074211 | .591739 | .177834 |
| 1 | .457791 | .448953 | .514427 | .274398 |
| 2 | .324759 | .425709 | .446046 | .282753 |
| 3 | .263623 | .380970 | .415259 | .241443 |
| 4 | .274131 | .368464 | .382321 | .224304 |
| 5 | .232085 | .381643 | .307228 | .287934 |
| 6 | .083705 | .300576 | .318368 | .291743 |
| 7-8 | .056070 | .296147 | .191076 | .192496 |
| 9-11 | .195457 | .226280 | .182347 | .114290 |
| 12-15 | .101269 | .069358 | .192093 | .078484 |
| 16-20 | .069806 | .135710 | .125896 | .092311 |
| 21-27 | .112335 | .089584 | .182605 | .092926 |
| 28-36 | .086165 | .088653 | .086040 | .112717 |
| 37-47 | .104680 | .087164 | .109515 | .121645 |
| 48-60 | .149613 | .105502 | .089910 | .094837 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .908775 | .622954 | .287857 | .856502 |
| 1 | .791956 | .212805 | .813458 | .462192 |
| 2 | .695776 | .346254 | .792060 | .309132 |
| 3 | .687253 | .458740 | .698241 | .244251 |
| 4 | .740343 | .513700 | .592116 | .317892 |
| 5 | .810708 | .363319 | .598281 | .120589 |
| 6 | .656261 | .373413 | .559697 | .263759 |
| 7 | .426185 | .489022 | .474798 | .339065 |
| 8 | .571139 | .592481 | .503909 | .326002 |
| 9-11 | .413724 | .527861 | .538382 | .411994 |
| 12-14 | .261482 | .415280 | .354186 | .472089 |
| 15-21 | .341864 | .293313 | .365270 | .270823 |
| 22-30 | .279991 | .241192 | .422115 | .190432 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)

GROSS STATISTICS

| | | |
|-----------------------|------------------------|------------------|
| CLEAR TRANSITIONAL | WIND SPEED 4.84 M/SEC | SIGMA A 10.9 DEG |
| | WIND DIRECTION 237 DEG | SIGMA E 7.5 DEG |
| | SOLAR RAD. 0.22 LY/MIN | |

| | | | | |
|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|
| WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN | 10 PT BLOCK AVG |
|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.13780E 01 | 0.11451E 01 | 0.80530E 00 | 0.75942E 00 |
| V | 0.73502E 00 | 0.70700E 00 | 0.65231E 00 | 0.30310E-00 |
| W | 0.31513E-00 | 0.30597E-00 | 0.29408E-00 | 0.95614E-01 |
| T | 0.23112E-00 | 0.32441E-02 | 0.25160E-02 | 0.17877E-02 |
| E | 0.12141E 01 | 0.10790E 01 | 0.87585E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.24254 | 0.22109 | 0.18541 | 0.18005 |
| V | 0.17714 | 0.17373 | 0.16687 | 0.11376 |
| W | 0.11598 | 0.11429 | 0.11204 | 0.06389 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.11542E-00 | 0.96185E-01 | 0.50909E-01 | 0.89129E-01 |
| U,W | -0.19347E-00 | -0.18347E-00 | -0.14724E-00 | -0.10960E-00 |
| U,T | 0.10775E-00 | -0.16091E-01 | -0.13135E-01 | -0.88734E-02 |
| V,W | 0.31781E-01 | 0.21148E-01 | 0.26541E-01 | 0.11829E-01 |
| V,T | -0.23099E-01 | 0.19070E-01 | 0.17793E-01 | 0.82560E-02 |
| W,T | -0.16180E-01 | -0.23486E-02 | -0.31500E-02 | 0.56873E-03 |
| WE | 0.69731E-01 | 0.74506E-01 | 0.56818E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.11469 | 0.10690 | 0.07024 | 0.18575 |
| U,W | -0.29360 | -0.30996 | -0.30256 | -0.40672 |
| U,T | 0.19093 | -0.26401 | -0.29182 | -0.24083 |
| V,W | 0.06500 | 0.04547 | 0.06060 | 0.06947 |
| V,T | -0.05604 | 0.39820 | 0.43922 | 0.35463 |
| W,T | -0.05995 | -0.07455 | -0.11580 | 0.04350 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.72486 10E 00 | 0.48677 10E 00 | 0.45020 10E-01 | 0.43803 10E 00 | 0.40512 10E-01 | 0.27205 10E-01 |
| 0 | .070092 | -.302508 | -.291749 | .060387 | .439393 | -.115746 |
| 1 | .066235 | -.273188 | -.230947 | .051265 | .359166 | -.051516 |
| 2 | .054095 | -.213580 | -.159363 | .038684 | .247127 | .009087 |
| 3 | .046226 | -.149692 | -.122115 | .035313 | .163493 | .030126 |
| 4 | .042899 | -.101454 | -.100835 | .042829 | .099732 | .035826 |
| 5 | .040940 | -.063120 | -.083779 | .038967 | .054189 | .039821 |
| 6 | .043986 | -.035065 | -.062462 | .027955 | .012612 | .029174 |
| 7 | .046672 | -.009068 | -.039378 | .013069 | -.023975 | .018205 |
| 8 | .044910 | .005216 | -.024356 | .006507 | -.042760 | .016975 |
| 9 | .043950 | .015640 | -.010562 | .006652 | -.053904 | .029626 |
| 10 | .039316 | .025119 | -.004275 | .002070 | -.052467 | .033565 |
| 11 | .025220 | .032614 | -.001555 | -.001818 | -.052730 | .027933 |
| 12 | .008966 | .035794 | .002712 | -.013005 | -.058116 | .017144 |
| 13 | -.002548 | .043830 | .009511 | -.020326 | -.069892 | .005534 |
| 14 | -.011971 | .048055 | .017434 | -.021996 | -.076278 | .001237 |
| 15 | -.024464 | .059329 | .016741 | -.021103 | -.072238 | -.001784 |
| 16 | -.040772 | .068378 | .019829 | -.018990 | -.072148 | -.006034 |
| 17 | -.054310 | .070351 | .028935 | -.020526 | -.073215 | -.007155 |
| 18 | -.050935 | .071741 | .043371 | -.020748 | -.078758 | -.008806 |
| 19 | -.039664 | .072527 | .063225 | -.028522 | -.085150 | -.003757 |
| 20 | -.029855 | .071082 | .079081 | -.027184 | -.086237 | .004298 |
| 21 | -.023906 | .072941 | .088225 | -.024718 | -.083279 | .002489 |
| 22 | -.024142 | .072698 | .092071 | -.015730 | -.084446 | -.007149 |
| 23 | -.026015 | .074831 | .090881 | -.015367 | -.084854 | -.010882 |
| 24 | -.025509 | .081471 | .091177 | -.030476 | -.082592 | -.013861 |
| 25 | -.022276 | .080400 | .085143 | -.035750 | -.074211 | -.012392 |
| 26 | -.013784 | .071002 | .081145 | -.040192 | -.068625 | -.016530 |
| 27 | -.007120 | .053340 | .079846 | -.041489 | -.060267 | -.015545 |
| 28 | -.003477 | .038141 | .074163 | -.039602 | -.056291 | -.013175 |
| 29 | -.004271 | .024214 | .067782 | -.041606 | -.055470 | -.010304 |
| 30 | -.004978 | .018348 | .059237 | -.038388 | -.045173 | -.004477 |
| 31 | -.004213 | .018336 | .043331 | -.038167 | -.020715 | -.010299 |
| 32 | -.008194 | .016416 | .033548 | -.031555 | .000422 | -.016043 |
| 33 | -.012943 | .004446 | .029827 | -.015108 | .017374 | -.007009 |
| 34 | -.020687 | .001030 | .020140 | -.002565 | .035402 | -.008357 |
| 35 | -.024983 | -.000076 | .012293 | .000746 | .040665 | -.015981 |
| 36 | -.031623 | .002751 | .006160 | .007713 | .043080 | -.013148 |
| 37 | -.036583 | .002883 | -.002076 | .021603 | .049799 | -.005949 |
| 38 | -.037566 | -.002317 | -.004974 | .038715 | .048897 | .006733 |
| 39 | -.038705 | -.003823 | -.004887 | .049329 | -.049732 | -.003733 |
| 40 | -.011785 | -.006389 | -.005303 | .050184 | .050795 | -.013195 |
| 41 | -.039333 | -.013971 | -.006637 | .044315 | .048601 | -.017499 |
| 42 | -.032072 | -.022736 | -.012119 | .025639 | .052173 | -.022762 |
| 43 | -.024516 | -.035892 | -.017168 | .013743 | .051531 | -.008481 |
| 44 | -.022539 | -.038647 | -.017169 | .022690 | .052741 | .010510 |
| 45 | -.021704 | -.037733 | -.018660 | .033193 | .051201 | .014361 |
| 46 | -.020449 | -.034091 | -.017048 | .036264 | .051545 | .005518 |
| 47 | -.021670 | -.032215 | -.020780 | .025391 | .054452 | .002284 |
| 48 | -.019993 | -.030016 | -.020261 | .014606 | .056281 | .000138 |
| 49 | -.019787 | -.021207 | -.019542 | .010845 | .056274 | .008546 |
| 50 | -.020946 | -.007737 | -.024147 | .008372 | .050674 | .003294 |
| 51 | -.019024 | .002461 | -.022211 | .010141 | .038675 | .006567 |
| 52 | -.014878 | .002243 | -.015475 | .004902 | .027756 | .013649 |
| 53 | -.008945 | -.001593 | -.007201 | -.004497 | .011975 | .014536 |
| 54 | -.003752 | -.006293 | -.002123 | -.00761 | -.006270 | .008025 |
| 55 | -.002991 | -.004862 | -.001266 | .003089 | .020319 | -.003023 |
| 56 | -.003678 | -.001114 | .000106 | -.003754 | -.028799 | -.015642 |
| 57 | -.009772 | -.005408 | .005322 | -.008035 | -.029456 | -.019942 |
| 58 | -.008729 | -.005793 | .012255 | -.007861 | -.029134 | -.024220 |
| 59 | .004111 | -.004496 | .021556 | .001C92 | -.037599 | -.023051 |
| 60 | .015478 | -.003088 | .028921 | .004921 | -.046778 | -.012295 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.72486 10E 00 | 0.48677 10E 00 | 0.45020 10E-01 | 0.43803 10E 00 | 0.40512 10E-01 | 0.27205 10E-01 |
| 1 | .003888 | -.039184 | -.011525 | .013220 | .052502 | -.046631 |
| 2 | .003102 | -.047577 | -.013950 | .013596 | .066838 | -.042052 |
| 3 | -.008325 | -.047182 | -.024902 | .001665 | .067314 | -.030812 |
| 4 | -.011262 | -.044027 | -.035188 | -.005486 | .065334 | -.020591 |
| 5 | -.009128 | -.033506 | -.045037 | -.010601 | .063697 | -.001509 |
| 6 | -.011570 | -.032912 | -.051834 | -.014125 | .062746 | .003795 |
| 7 | -.018206 | -.033408 | -.056883 | -.012066 | .054473 | .003172 |
| 8 | -.021692 | -.031651 | -.057779 | -.014356 | .044260 | .005726 |
| 9 | -.026131 | -.032998 | -.055993 | -.009989 | .027113 | .009676 |
| 10 | -.025673 | -.030150 | -.055292 | -.007395 | .011278 | .017423 |
| 11 | -.017452 | -.014256 | -.059104 | -.016006 | .009342 | .030420 |
| 12 | -.011782 | -.004203 | -.063491 | -.022701 | .016699 | .040862 |
| 13 | -.010617 | -.002167 | -.061535 | -.027245 | .030781 | .035682 |
| 14 | -.010195 | .002330 | -.057341 | -.033389 | .036389 | .034158 |
| 15 | -.014245 | .005156 | -.056910 | -.041075 | .030679 | .037725 |
| 16 | -.016745 | .012423 | -.050112 | -.038378 | .029183 | .037779 |
| 17 | -.013870 | .009276 | -.042468 | -.017562 | .029403 | .015924 |
| 18 | -.011033 | -.001685 | -.031072 | .001917 | .028179 | -.011319 |
| 19 | -.015164 | -.012034 | -.022944 | .004813 | .023971 | -.021825 |
| 20 | -.027543 | -.010411 | -.019111 | -.004681 | .018259 | -.012956 |
| 21 | -.037935 | -.015128 | -.012375 | -.012089 | .011320 | -.002055 |
| 22 | -.043372 | -.024602 | -.006348 | -.014788 | .001861 | -.005206 |
| 23 | -.043938 | -.023659 | -.001727 | -.011053 | -.011034 | -.011016 |
| 24 | -.037002 | -.022491 | .004832 | -.013595 | -.019271 | -.013893 |
| 25 | -.034912 | -.014588 | .007538 | -.010807 | -.028427 | -.007409 |
| 26 | -.031228 | -.004081 | .006383 | -.013880 | -.039469 | .000215 |
| 27 | -.028251 | .000114 | .007584 | -.007551 | -.046483 | .000715 |
| 28 | -.022936 | .002395 | .010630 | .003024 | -.049488 | -.009123 |
| 29 | -.017964 | .005763 | .016650 | .006558 | -.056238 | -.013690 |
| 30 | -.018441 | .002422 | .026812 | -.005038 | -.054094 | -.009687 |
| 31 | -.016219 | -.003509 | .032161 | -.013783 | -.049828 | -.005266 |
| 32 | -.013247 | -.001021 | .031372 | -.019314 | -.049323 | -.005777 |
| 33 | -.011940 | .005263 | .022601 | -.010887 | -.053179 | -.007408 |
| 34 | -.015060 | -.008175 | .018966 | -.003318 | -.057956 | .001244 |
| 35 | -.010897 | .005333 | .020816 | .014792 | -.059510 | .002805 |
| 36 | -.002890 | .000418 | .021229 | .016959 | -.051816 | .000305 |
| 37 | .007037 | -.003835 | .021015 | .017033 | -.037899 | .000265 |
| 38 | .014958 | -.007072 | .023710 | .007003 | -.021653 | .002324 |
| 39 | .017515 | -.014929 | .024544 | -.009848 | -.010390 | .004264 |
| 40 | .014182 | -.017057 | .022009 | -.020867 | -.004171 | .006805 |
| 41 | .009995 | -.008532 | .018376 | -.025542 | .003491 | .015548 |
| 42 | .006366 | .008690 | .011543 | -.024000 | .013455 | .026526 |
| 43 | .013913 | .017952 | .010261 | -.011491 | .018365 | .016649 |
| 44 | .021364 | .023820 | .008184 | -.004301 | .024496 | .004492 |
| 45 | .027449 | .021856 | .003674 | -.000154 | .033885 | .002644 |
| 46 | .031403 | .022116 | .002467 | -.002429 | .043729 | .009851 |
| 47 | .035250 | .015883 | .002014 | -.001031 | .049715 | .010493 |
| 48 | .038274 | .016500 | -.003214 | .006335 | .055120 | .007521 |
| 49 | .039107 | .022443 | -.008204 | .014559 | .053004 | .005060 |
| 50 | .039602 | .027310 | -.008316 | .019178 | .051140 | -.000246 |
| 51 | .041293 | .019985 | -.001839 | .029472 | .049599 | -.008721 |
| 52 | .042750 | .004434 | .001487 | .037981 | .046824 | -.013168 |
| 53 | .044272 | -.002021 | .004135 | .041011 | .047168 | -.010912 |
| 54 | .046872 | .011522 | -.007125 | .041615 | .042511 | .006007 |
| 55 | .049107 | .025274 | -.012222 | .042530 | .036939 | .016218 |
| 56 | .046386 | .031333 | -.012247 | .042739 | .033568 | .017296 |
| 57 | .041195 | .028952 | -.008940 | .035119 | .035315 | .017649 |
| 58 | .031494 | .020066 | -.007191 | .031353 | .030857 | .003046 |
| 59 | .020841 | .010224 | -.004729 | .038442 | .018002 | -.017432 |
| 60 | .013040 | .003488 | -.003157 | .036706 | .009640 | -.012342 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.80553 10E 00 | 0.65228 10E 00 | 0.29415 10E 00 | 0.25162 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .838102 | .776632 | .625329 | .760301 |
| 2 | .643792 | .510999 | .291296 | .504611 |
| 3 | .495141 | .326919 | .114008 | .354084 |
| 4 | .393931 | .198310 | .041300 | .256208 |
| 5 | .317825 | .108027 | -.018028 | .186204 |
| 6 | .247983 | .031925 | -.035223 | .127915 |
| 7 | .180814 | -.024839 | -.061250 | .069524 |
| 8 | .119177 | -.065532 | -.066928 | .029627 |
| 9 | .058570 | -.093008 | -.091387 | -.002825 |
| 10 | .002528 | -.094139 | -.093451 | -.023265 |
| 11 | -.036152 | -.102675 | -.088133 | -.035055 |
| 12 | -.066982 | -.115110 | -.083225 | -.050069 |
| 13 | -.096489 | -.128642 | -.073535 | -.073288 |
| 14 | -.129427 | -.133218 | -.073105 | -.100158 |
| 15 | -.155052 | -.127186 | -.076842 | -.115573 |
| 16 | -.185910 | -.127241 | -.085720 | -.129344 |
| 17 | -.213972 | -.138360 | -.090426 | -.148710 |
| 18 | -.232960 | -.158240 | -.087350 | -.176963 |
| 19 | -.258846 | -.169110 | -.097225 | -.208729 |
| 20 | -.279106 | -.166522 | -.102857 | -.231795 |
| 21 | -.292641 | -.160415 | -.094875 | -.238917 |
| 22 | -.308077 | -.157991 | -.075528 | -.231316 |
| 23 | -.313234 | -.164920 | -.066091 | -.225932 |
| 24 | -.306470 | -.169422 | -.077718 | -.224861 |
| 25 | -.291002 | -.163948 | -.091579 | -.207836 |
| 26 | -.270568 | -.163159 | -.081322 | -.191553 |
| 27 | -.245139 | -.148904 | -.079284 | -.170712 |
| 28 | -.215148 | -.136386 | -.074708 | -.148878 |
| 29 | -.183032 | -.127172 | -.061041 | -.135967 |
| 30 | -.143219 | -.100085 | -.068258 | -.115253 |
| 31 | -.114640 | -.052093 | -.033131 | -.076999 |
| 32 | -.093161 | -.019683 | -.003202 | -.050827 |
| 33 | -.077463 | .003159 | .020348 | -.030455 |
| 34 | -.067512 | .026515 | .047457 | -.009547 |
| 35 | -.054881 | .034703 | .056114 | .001205 |
| 36 | -.041506 | .041988 | .045831 | .004534 |
| 37 | -.032957 | .046145 | .019639 | .022273 |
| 38 | -.020766 | .046340 | .003906 | .027959 |
| 39 | -.004501 | .041181 | .014450 | .045070 |
| 40 | .009979 | .036954 | .017605 | .054262 |
| 41 | .026129 | .032903 | .021238 | .062288 |
| 42 | .046310 | .031158 | .032359 | .075621 |
| 43 | .055269 | .025692 | .032393 | .066123 |
| 44 | .053699 | .033494 | .025848 | .051340 |
| 45 | .048968 | .050228 | .041840 | .039626 |
| 46 | .049009 | .055776 | .056634 | .043203 |
| 47 | .051234 | .056678 | .056603 | .052878 |
| 48 | .054742 | .058140 | .038458 | .053531 |
| 49 | .047200 | .053952 | .020951 | .045870 |
| 50 | .039269 | .046026 | .013284 | .039950 |
| 51 | .026541 | .035984 | -.008903 | .026560 |
| 52 | .017599 | .018437 | -.034713 | -.000856 |
| 53 | .012173 | .002254 | -.042616 | -.023035 |
| 54 | .004615 | -.007763 | -.031161 | -.028576 |
| 55 | .002391 | -.012360 | -.007334 | -.033026 |
| 56 | .001770 | -.015989 | .011988 | -.036703 |
| 57 | -.004398 | -.014400 | .024579 | -.038289 |
| 58 | -.007407 | -.017946 | .042723 | -.039574 |
| 59 | -.007523 | -.019631 | .054608 | -.040630 |
| 60 | -.009291 | -.013067 | .043731 | -.051010 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-03 |
| 0 | .011425 | -.009804 | -.016123 | -.013176 | .008155 | .025502 |
| 1 | .155452 | -.131494 | -.167889 | .231134 | .084313 | .198158 |
| 2 | .148356 | -.210237 | -.217189 | .668123 | .181312 | .164221 |
| 3 | .116381 | -.251797 | -.204268 | .765501 | .257829 | .029723 |
| 4 | .086950 | -.174946 | -.095117 | .211437 | .182604 | -.106585 |
| 5 | .021248 | -.113018 | -.045683 | .116127 | .126221 | -.153289 |
| 6 | -.045628 | -.093131 | -.059679 | .290188 | .129821 | -.184967 |
| 7-8 | -.027546 | -.089210 | -.068776 | -.013906 | .111049 | -.188420 |
| 9-11 | .016447 | -.052305 | -.032127 | .012337 | .070356 | -.130503 |
| 12-15 | .010409 | -.025787 | -.022491 | .000864 | .037708 | -.146208 |
| 16-20 | .006711 | -.015111 | -.018184 | -.011688 | .021006 | -.145714 |
| 21-27 | .003170 | -.006934 | -.015896 | .077089 | .017815 | -.064713 |
| 28-36 | .000288 | -.001264 | -.008859 | .013327 | .008320 | -.070121 |
| 37-47 | -.000348 | -.000465 | -.005468 | -.000151 | .005503 | -.036880 |
| 48-60 | -.000657 | -.000813 | -.002272 | .002691 | .002373 | -.020491 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 |
| 1 | -.126244 | -.407715 | -.069151 | -.479613 | -.001418 | .108530 |
| 2 | -.081862 | -.398880 | -.101464 | -.343451 | .055438 | .117944 |
| 3 | -.001358 | -.321498 | -.103765 | -.209885 | .100304 | .174214 |
| 4 | .011616 | -.342355 | -.048114 | -.071859 | .040934 | .082030 |
| 5 | -.017757 | -.395496 | -.011413 | .068545 | .007319 | -.111532 |
| 6 | -.025474 | -.468893 | -.000719 | .067239 | .034036 | -.208874 |
| 7-8 | -.002879 | -.321039 | -.002128 | .126237 | .043820 | -.225166 |
| 9-11 | .015088 | -.039288 | -.003867 | -.042730 | .025351 | -.043174 |
| 12-15 | .001546 | -.147833 | -.003701 | .113540 | .004822 | -.109043 |
| 16-20 | -.001388 | -.111999 | -.001372 | .013998 | .010027 | -.078409 |
| 21-27 | .006340 | -.033612 | -.001107 | .038427 | .005326 | -.032017 |
| 28-36 | .002252 | -.024906 | -.000974 | .014096 | .003589 | -.031653 |
| 37-47 | -.002083 | -.028006 | -.001139 | -.001326 | .001648 | -.023360 |
| 48-60 | -.001054 | -.000763 | -.000901 | .000478 | .000096 | -.005285 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-01 | 10E-01 | 10E-03 |
| 0 | .008808 | .024782 | .006344 | .023728 |
| 1 | .104696 | .396548 | .094402 | .229529 |
| 2 | .14057 | .660956 | .167427 | .320147 |
| 3 | .143010 | .819919 | .227656 | .354444 |
| 4 | .082655 | .597403 | .187069 | .215217 |
| 5 | .042866 | .426456 | .152857 | .120809 |
| 6 | .095277 | .434393 | .160628 | .118305 |
| 7-8 | .034444 | .384046 | .151052 | .121900 |
| 9-11 | .018379 | .247653 | .120781 | .081937 |
| 12-15 | .013396 | .148922 | .085623 | .053371 |
| 16-20 | .010298 | .096324 | .071327 | .038974 |
| 21-27 | .005777 | .072055 | .050289 | .029415 |
| 28-36 | .003365 | .041434 | .034732 | .018138 |
| 37-47 | .002251 | .025523 | .022931 | .012491 |
| 48-60 | .001569 | .016299 | .016621 | .007094 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.48009 10E 00 | 0.26954 10E 00 | 0.36873 10E-01 | 0.17029 10E 00 | 0.23296 10E-01 | 0.13079 10E-01 |
| 0 | .185650 | -.406613 | -.240647 | .069462 | .354398 | .043485 |
| 1 | .125716 | -.118320 | -.105255 | -.002613 | .041369 | .063762 |
| 2 | .043694 | -.022703 | -.003402 | -.054212 | -.067866 | .029903 |
| 3 | .043802 | -.023047 | .068393 | -.074002 | -.059551 | -.032620 |
| 4 | -.011724 | .012588 | .044791 | .054474 | -.011195 | -.014935 |
| 5 | .004046 | .046154 | .041636 | .049263 | -.048631 | .003483 |
| 6 | .047297 | .035279 | .085020 | -.028901 | -.129800 | -.055193 |
| 7 | .086781 | .095282 | .056283 | .009678 | -.111238 | -.038305 |
| 8 | .018074 | .055587 | .003995 | .023325 | .015561 | .021650 |
| 9 | -.098473 | .022805 | .005204 | -.046407 | .048671 | -.023255 |
| 10 | -.079947 | .152185 | .063699 | -.037512 | -.018069 | -.078546 |
| 11 | -.056201 | .166462 | .080465 | .079794 | .007297 | -.056428 |
| 12 | -.085864 | .090099 | .035904 | .101388 | .045377 | .006916 |
| 13 | -.126922 | .054225 | -.024789 | .097722 | .033024 | .006788 |
| 14 | -.092480 | -.034434 | -.055729 | -.051977 | -.003339 | .015144 |
| 15 | -.039081 | -.039656 | -.060572 | -.024791 | .031196 | .049643 |
| 16 | .004565 | -.041272 | -.036652 | .039854 | .046094 | .094371 |
| 17 | .028810 | -.065763 | -.011804 | .007581 | .051720 | -.006093 |
| 18 | .033485 | -.052175 | .009406 | -.040831 | -.006057 | -.069675 |
| 19 | .029632 | -.058087 | .042132 | .023882 | -.032382 | -.025598 |
| 20 | .003077 | -.110407 | -.012424 | -.096008 | .008347 | -.035939 |
| 21 | -.034685 | -.127713 | -.050952 | -.062481 | -.025339 | .047649 |
| 22 | -.011471 | -.055255 | -.082961 | -.042690 | -.073257 | .037291 |
| 23 | .068756 | -.047094 | -.040583 | -.010228 | -.065182 | .062806 |
| 24 | .030070 | .016147 | -.017659 | .030333 | .020163 | .064639 |
| 25 | -.032080 | .035891 | -.016875 | .010961 | .027429 | .026677 |
| 26 | -.031423 | .013530 | -.037618 | -.056230 | -.010495 | -.011195 |
| 27 | -.019036 | .090397 | -.009560 | -.000733 | .025077 | .018221 |
| 28 | -.001898 | .055373 | .011219 | -.036857 | .023977 | .000092 |
| 29 | -.042078 | .077156 | -.001702 | .057452 | -.013602 | -.033536 |
| 30 | -.011685 | .069498 | .023613 | .029082 | -.009763 | -.057146 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .013154 | .000996 | .007582 | .029000 | -.047099 | -.016291 |
| 1 | .133245 | -.001685 | .032582 | .069327 | -.173166 | -.063274 |
| 2 | .173696 | -.071785 | -.022072 | -.117328 | -.096444 | .058956 |
| 3 | .162082 | -.156162 | -.087583 | -.181269 | .210752 | .181349 |
| 4 | .031773 | -.106060 | -.104828 | .046565 | .662796 | .211094 |
| 5 | -.041180 | -.032735 | -.084176 | .107372 | .687194 | .131530 |
| 6 | .018634 | -.031963 | -.049763 | -.059808 | .581700 | -.032242 |
| 7 | .097511 | -.053412 | -.069624 | -.131756 | .539341 | .057293 |
| 8 | .093844 | -.077339 | -.110307 | -.100702 | .299445 | .217935 |
| 9-11 | .069110 | -.027924 | -.034170 | .257310 | .197499 | .016915 |
| 12-14 | -.034647 | -.054510 | -.059516 | .126795 | .637324 | .033114 |
| 15-21 | .032281 | -.043394 | -.011422 | .027877 | .371714 | -.060074 |
| 22-30 | .001731 | -.031010 | -.021530 | .080676 | .338399 | -.000828 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.48009 10E 00 | 0.26954 10E 00 | 0.36873 10E-01 | 0.17029 10E 00 | 0.23296 10E-01 | 0.13079 10E-01 |
| 1 | -.037680 | -.018244 | -.085727 | -.060059 | .049216 | .056893 |
| 2 | -.070110 | .000639 | -.068419 | -.078856 | .005372 | .042274 |
| 3 | -.082271 | -.025587 | -.062537 | -.068419 | -.044799 | .028171 |
| 4 | -.008704 | .011726 | -.043693 | -.009189 | -.008674 | .029419 |
| 5 | .014061 | .039493 | -.028466 | -.001352 | .049314 | -.002134 |
| 6 | -.007551 | .006053 | -.020327 | .031664 | .005445 | -.035168 |
| 7 | -.017359 | -.030447 | .008109 | .013598 | -.041062 | -.070858 |
| 8 | -.078077 | -.019408 | -.002722 | -.037239 | -.051413 | -.020834 |
| 9 | -.066149 | -.046509 | -.027853 | -.024269 | -.035955 | .001095 |
| 10 | -.036981 | -.061378 | -.018135 | .015518 | -.046476 | -.042209 |
| 11 | -.058818 | -.024608 | -.014097 | -.023260 | -.004253 | -.061051 |
| 12 | -.012040 | .025326 | -.002241 | .004913 | .097287 | -.016121 |
| 13 | .021872 | .058552 | .044675 | .077893 | .049120 | -.004581 |
| 14 | .042618 | .003364 | .076971 | .022004 | .073175 | -.022068 |
| 15 | .084064 | .038914 | .082208 | .046982 | .044331 | -.004739 |
| 16 | .020419 | .047198 | .048295 | .025223 | .001942 | .026126 |
| 17 | .000656 | .004940 | .067378 | -.012156 | .031701 | .066016 |
| 18 | .036749 | .004533 | .077153 | -.003262 | .010262 | .036636 |
| 19 | .059100 | .059494 | .056696 | -.027680 | .023135 | .079290 |
| 20 | .005369 | .050864 | .006078 | -.032399 | -.019936 | .065867 |
| 21 | -.056877 | .023166 | -.029412 | -.077246 | -.084958 | .058484 |
| 22 | -.013678 | -.034305 | -.000337 | -.053965 | -.018203 | .006705 |
| 23 | -.021575 | .002016 | -.037757 | .023281 | -.026014 | -.036759 |
| 24 | .015777 | -.044954 | -.057964 | .042410 | -.035564 | -.019015 |
| 25 | -.065278 | -.078356 | -.070426 | .009922 | .033515 | .024982 |
| 26 | -.054078 | -.098598 | -.018663 | -.004940 | .002213 | -.039284 |
| 27 | .026509 | -.058134 | .003890 | .023778 | -.020134 | -.043212 |
| 28 | -.001377 | -.055389 | .006405 | .045021 | -.072374 | -.084531 |
| 29 | -.050997 | -.045217 | -.010037 | -.042830 | .033095 | -.023435 |
| 30 | -.015241 | .024849 | -.009229 | -.048016 | .094888 | .010410 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-02 | 10E-03 | 10E-03 |
| 1 | -.590291 | .049955 | .263216 | -.009545 | .137615 | -.059462 |
| 2 | -.055200 | -.170817 | -.475632 | -.056896 | -.059425 | -.148877 |
| 3 | -.894544 | -.206864 | -.945262 | -.219765 | -.290447 | -.013113 |
| 4 | -.055718 | .191139 | -.351964 | -.215390 | -.038764 | .227778 |
| 5 | .261253 | .251549 | -.138375 | -.040344 | .345831 | .159279 |
| 6 | -.334188 | .084579 | -.554521 | -.151471 | .239756 | .100661 |
| 7 | -.831068 | -.159216 | -.612418 | -.329779 | -.055302 | .163259 |
| 8 | -.877214 | -.369337 | -.432778 | -.285380 | -.247232 | .126318 |
| 9-11 | -.348791 | -.070000 | -.113642 | -.124725 | .012373 | .034489 |
| 12-14 | .179169 | -.015823 | -.184000 | .008187 | .203012 | -.015087 |
| 15-21 | .144136 | .011954 | -.127444 | .014368 | .109776 | .056962 |
| 22-30 | -.137242 | -.071334 | -.078601 | -.051917 | .011584 | .006119 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.75990 10E 00 | 0.30331 10E 00 | 0.95605 10E-01 | 0.17892 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .526370 | .148347 | .013810 | .447216 |
| 2 | .180007 | -.124243 | -.022589 | .095599 |
| 3 | .055854 | -.114155 | -.016368 | -.008762 |
| 4 | -.007576 | -.050094 | -.051839 | -.013795 |
| 5 | -.054302 | -.015787 | -.069081 | -.093043 |
| 6 | -.095330 | -.085604 | -.024799 | -.147774 |
| 7 | -.106752 | .001923 | -.130269 | -.072254 |
| 8 | -.131924 | .045248 | -.065352 | .025364 |
| 9 | -.204070 | -.107333 | .000585 | -.028450 |
| 10 | -.360152 | -.140603 | -.153240 | -.137974 |
| 11 | -.342390 | -.024021 | .002405 | -.174170 |
| 12 | -.210441 | .089526 | .027842 | -.156806 |
| 13 | -.112940 | -.032948 | -.111578 | -.092344 |
| 14 | -.053591 | -.133939 | -.000304 | -.034694 |
| 15 | -.008120 | -.009776 | -.059752 | .012635 |
| 16 | .011335 | -.043421 | .010159 | .059054 |
| 17 | .028021 | .100797 | .095299 | .021438 |
| 18 | .103572 | .089747 | -.005894 | -.053238 |
| 19 | .094011 | .000794 | .040754 | -.078590 |
| 20 | .111695 | -.013947 | .053174 | .003097 |
| 21 | .104511 | -.088232 | .042210 | -.014074 |
| 22 | .108490 | -.089639 | .018482 | -.004037 |
| 23 | .111550 | -.027779 | .063578 | .018328 |
| 24 | .043136 | .084025 | -.036063 | .079496 |
| 25 | -.019119 | .055420 | -.009419 | .054844 |
| 26 | -.040348 | -.018302 | .034902 | .014823 |
| 27 | -.123449 | .086870 | -.118044 | -.026413 |
| 28 | -.155931 | -.033010 | .040938 | -.022837 |
| 29 | -.137729 | -.041833 | -.053534 | -.016678 |
| 30 | -.108228 | -.004011 | -.036502 | -.012088 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-02 | 10E-03 |
| 0 | .003931 | .009056 | .018905 | .020305 |
| 1 | .043755 | .074094 | .150034 | .125470 |
| 2 | .082553 | .097976 | .304702 | .143373 |
| 3 | .117561 | .133340 | .507347 | .167904 |
| 4 | .079287 | .135244 | .458429 | .143922 |
| 5 | .035986 | .112164 | .382531 | .110127 |
| 6 | .029554 | .130258 | .399853 | .102812 |
| 7 | .040721 | .162442 | .365533 | .136179 |
| 8 | .053602 | .138883 | .309549 | .135841 |
| 9-11 | .032716 | .182108 | .370044 | .057519 |
| 12-14 | .025204 | .127506 | .365670 | .075732 |
| 15-21 | .018025 | .136125 | .467864 | .050118 |
| 22-30 | .011733 | .126509 | .539624 | .037165 |

RUN NO 90C 46K 6-18-63 1721-1836(EST)

GROSS STATISTICS

| | | |
|-----------------------|------------------------|------------------|
| CLEAR TRANSITIONAL | WIND SPEED 6.72 M/SEC | SIGMA A 8.10 DEG |
| | WIND DIRECTION 239 DEG | SIGMA E 5.8 DBG |
| | SOLAR RAD. 0.22 LY/MIN | |

| | WITH 10 RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.14405E 01 | 0.11907E 01 | 0.92004E 00 | 0.80321E 00 |
| V | 0.87833E 00 | 0.78064E 00 | 0.73780E 00 | 0.32535E-00 |
| W | 0.41025E-00 | 0.40541E-00 | 0.39466E-00 | 0.15134E-00 |
| T | 0.15386E-00 | 0.35726E-02 | 0.27923E-02 | 0.20753E-02 |
| E | 0.13646E 01 | 0.11884E 01 | 0.10263E 01 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.17860 | 0.16238 | 0.14274 | 0.13337 |
| V | 0.13946 | 0.13148 | 0.12782 | 0.08488 |
| W | 0.09531 | 0.09475 | 0.09349 | 0.05789 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.91852E-02 | 0.16574E-01 | 0.22742E-01 | 0.20967E-01 |
| U,W | -0.35372E-00 | -0.36459E-00 | -0.32062E-00 | -0.22051E-00 |
| U,T | 0.81131E-01 | 0.20031E-01 | 0.16793E-01 | 0.14529E-01 |
| V,W | -0.33002E-01 | -0.37044E-01 | -0.45118E-01 | -0.91154E-02 |
| V,T | -0.65599E-01 | 0.39312E-02 | 0.42400E-02 | 0.23837E-02 |
| W,T | -0.10376E-01 | -0.18178E-01 | -0.18185E-01 | -0.75021E-02 |
| WE | -0.10295E-01 | 0.24541E-01 | -0.11705E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.00817 | 0.01719 | 0.02760 | 0.04102 |
| U,W | -0.46012 | -0.52476 | -0.53208 | -0.63244 |
| U,T | 0.17233 | 0.30713 | 0.33131 | 0.35585 |
| V,W | -0.05498 | -0.06585 | -0.08361 | -0.04108 |
| V,T | -0.17844 | 0.07444 | 0.09342 | 0.09174 |
| W,T | -0.04130 | -0.47766 | -0.54780 | -0.42331 |

RUN NO 90C 48M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.82380 10E 00 | 0.60263 10E 00 | J.50698 10E-01 | 0.53956 10E 00 | 0.45392 10E-01 | 0.33205 10E-01 |
| 0 | .027458 | -.532099 | .331339 | -.083608 | .093634 | -.547693 |
| 1 | .033330 | -.478260 | .320147 | -.066508 | .096580 | -.438388 |
| 2 | .038607 | -.392222 | .283804 | -.040537 | .084318 | -.300460 |
| 3 | .034206 | -.310567 | .239685 | -.018467 | .066505 | -.203916 |
| 4 | .024599 | -.238684 | .194848 | .001366 | .052142 | -.137990 |
| 5 | .017330 | -.177502 | .151060 | .009461 | .043751 | -.084337 |
| 6 | .011830 | -.126104 | .114586 | .005924 | .036621 | -.047144 |
| 7 | .015686 | -.074702 | .080823 | .001757 | .033426 | -.014080 |
| 8 | .021898 | -.026111 | .050730 | -.004162 | .024909 | .015086 |
| 9 | .021901 | .015773 | .021448 | -.011663 | .010650 | .038917 |
| 10 | .022724 | .050401 | .000776 | -.016548 | -.000257 | .047911 |
| 11 | .018894 | .080560 | -.019538 | -.015039 | -.009317 | .063326 |
| 12 | .015891 | .105246 | -.042471 | -.003105 | -.018220 | .086157 |
| 13 | .010999 | .120070 | -.062215 | .010461 | .026542 | .100206 |
| 14 | .005038 | .125485 | -.075629 | .014315 | -.029649 | .101487 |
| 15 | .000173 | .123520 | -.090607 | .013838 | -.031199 | .099426 |
| 16 | -.007659 | .123283 | -.099412 | .004302 | -.026161 | .095189 |
| 17 | -.016364 | .12499^ | -.105869 | .004776 | -.020883 | .091032 |
| 18 | -.021526 | .133560 | -.111787 | .015986 | -.023834 | .088680 |
| 19 | -.028371 | .146065 | -.114740 | .027753 | -.032661 | .086520 |
| 20 | -.034924 | .151481 | -.123311 | .030917 | -.050968 | .093827 |
| 21 | -.037516 | .162563 | -.133423 | .029408 | -.064098 | .102976 |
| 22 | -.038707 | .171000 | -.142716 | .032502 | -.066773 | .10736. |
| 23 | -.037610 | .176769 | -.150613 | .035906 | -.064985 | .108968 |
| 24 | -.036365 | .180358 | -.154639 | .040878 | -.066662 | .111691 |
| 25 | -.035896 | .179054 | -.157182 | .039494 | -.063312 | .122565 |
| 26 | -.030794 | .169091 | -.158517 | .034053 | -.061758 | .140467 |
| 27 | -.030736 | .154382 | -.147960 | .030008 | -.055332 | .137097 |
| 28 | -.031449 | .129425 | -.125512 | .025377 | -.047846 | .114332 |
| 29 | -.028013 | .107436 | -.103225 | .012061 | -.036621 | .087132 |
| 30 | -.020747 | .087598 | -.080858 | -.000422 | -.019377 | .061647 |
| 31 | -.014876 | .068401 | -.062168 | -.004541 | -.013136 | .039731 |
| 32 | -.011462 | .044686 | -.040088 | -.008901 | -.009553 | .023003 |
| 33 | -.011632 | .016665 | -.018728 | -.010230 | -.007046 | .003991 |
| 34 | -.010146 | -.006997 | -.001892 | -.007508 | -.007019 | -.012988 |
| 35 | -.009520 | -.022869 | .010674 | -.006573 | -.001965 | -.026164 |
| 36 | -.009343 | -.037281 | .020298 | -.005258 | .002881 | -.029085 |
| 37 | -.008436 | -.056832 | .027961 | -.001260 | .008204 | -.027272 |
| 38 | -.005307 | -.073090 | .034318 | -.006001 | .020103 | -.031058 |
| 39 | .002555 | -.085490 | .040189 | -.011924 | .024556 | -.038548 |
| 40 | .011823 | -.096406 | .049551 | -.018983 | .025527 | -.047845 |
| 41 | .016214 | -.104942 | .058911 | -.020825 | .032566 | -.058857 |
| 42 | .014078 | -.103608 | .068684 | -.023837 | .038502 | -.070266 |
| 43 | .010972 | -.096408 | .073865 | -.016418 | .035865 | -.076877 |
| 44 | .011254 | -.090379 | .075159 | -.016326 | .037914 | -.077657 |
| 45 | .009937 | -.091166 | .075174 | -.018625 | .043603 | -.088197 |
| 46 | .015417 | -.089116 | .078741 | -.021166 | .047384 | -.096244 |
| 47 | .023441 | -.081575 | .081216 | -.028076 | .046808 | -.088130 |
| 48 | .027833 | -.070491 | .079268 | -.036840 | .045202 | -.071639 |
| 49 | .029977 | -.056020 | .072715 | -.050466 | .052444 | -.052813 |
| 50 | .029381 | -.031776 | .059921 | -.055382 | .056405 | -.032456 |
| 51 | .023040 | -.022437 | .042202 | -.045338 | .054449 | -.017923 |
| 52 | .020944 | -.016463 | .031333 | -.032152 | .043541 | -.014007 |
| 53 | .016803 | -.014771 | .031313 | -.019240 | .030014 | -.022288 |
| 54 | .004962 | -.008206 | .033548 | -.006687 | .017515 | -.020449 |
| 55 | -.003960 | .000213 | .030653 | .004768 | .008630 | -.013269 |
| 56 | -.010709 | .005483 | .023391 | .020060 | .006090 | -.009679 |
| 57 | -.011474 | .013846 | .009329 | .031714 | .001753 | -.005882 |
| 58 | -.009405 | .031321 | -.001733 | .041161 | -.008350 | -.003515 |
| 59 | -.005222 | .053001 | -.015676 | .037689 | -.015422 | .008282 |
| 60 | -.004751 | .076397 | -.032514 | .033899 | -.018774 | .022453 |

RUN NO 90C 46M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.82380 10E 00 | 0.60263 10E 00 | 0.50698 10E-01 | 0.53956 10E 00 | 0.45392 10E-01 | 0.33205 10E-01 |
| 1 | -.006492 | .002210 | .001290 | -.006003 | .022863 | -.042103 |
| 2 | -.006364 | .000108 | .003503 | -.002109 | .032615 | -.048385 |
| 3 | -.008784 | .001178 | .004372 | .001157 | .031184 | -.056763 |
| 4 | -.011173 | .009953 | -.001380 | .002044 | .033991 | -.057580 |
| 5 | -.016128 | .016299 | -.003973 | .000367 | .036839 | -.064225 |
| 6 | -.022896 | .023243 | -.001956 | -.008176 | .040037 | -.067142 |
| 7 | -.028114 | .031458 | -.003304 | -.010330 | .038184 | -.060694 |
| 8 | -.029132 | .035855 | -.010542 | -.004790 | .026337 | -.053629 |
| 9 | -.029198 | .036579 | -.008804 | -.00312 | .010645 | -.049509 |
| 10 | -.026043 | .037006 | -.007526 | .000202 | -.003596 | -.049434 |
| 11 | -.025174 | .036519 | -.005189 | .012362 | -.010838 | -.051604 |
| 12 | -.027886 | .035455 | -.002076 | .023334 | -.012535 | -.049415 |
| 13 | -.031382 | .028249 | .003156 | .025105 | -.009695 | -.043762 |
| 14 | -.026986 | .019844 | .005246 | .028391 | -.005955 | -.030721 |
| 15 | -.019307 | .014797 | .001903 | .025163 | .003273 | -.017277 |
| 16 | -.016830 | .014235 | .001752 | .015040 | .008263 | -.012822 |
| 17 | -.016634 | .016554 | .001808 | .016163 | .014794 | -.012503 |
| 18 | -.015870 | .014973 | -.000014 | .025604 | .013065 | -.016845 |
| 19 | -.018794 | .011038 | -.005024 | .022576 | .014674 | -.016757 |
| 20 | -.019607 | .004740 | -.004890 | .011129 | .016494 | -.012641 |
| 21 | -.016124 | .002532 | -.003645 | -.002655 | .023850 | -.008378 |
| 22 | -.013755 | -.005144 | .001204 | -.006250 | .021568 | -.006553 |
| 23 | -.017309 | -.012250 | .012603 | -.006165 | .019222 | -.002817 |
| 24 | -.013498 | -.019877 | .026497 | -.006979 | .010556 | .003022 |
| 25 | -.007469 | -.029077 | .039662 | -.006983 | .001893 | .007097 |
| 26 | .001512 | -.030598 | .042577 | -.009474 | .005935 | .011402 |
| 27 | .007665 | -.027393 | .040388 | -.008529 | .011045 | .018190 |
| 28 | .016181 | -.024136 | .043644 | .001220 | .003490 | .022658 |
| 29 | .029318 | -.014959 | .048108 | .010517 | -.007472 | .019454 |
| 30 | .035133 | -.009772 | .045907 | .012206 | -.018556 | .021212 |
| 31 | .040400 | -.011242 | .037501 | .008730 | -.021047 | .030991 |
| 32 | .042367 | -.007745 | .026790 | .004908 | -.024928 | .039892 |
| 33 | .039028 | -.004465 | .023298 | -.000093 | -.030168 | .042292 |
| 34 | .031308 | -.010082 | .024482 | -.008316 | -.038938 | .035591 |
| 35 | .023891 | -.013510 | .024766 | -.018401 | -.040181 | .024580 |
| 36 | .023896 | -.021484 | .022233 | -.020286 | -.036339 | .015727 |
| 37 | .026330 | -.026324 | .012230 | -.023230 | -.024057 | .010464 |
| 38 | .030030 | -.023397 | .005402 | -.012196 | -.019586 | .004582 |
| 39 | .036144 | -.015975 | .002440 | -.002036 | -.018089 | .000179 |
| 40 | .039308 | -.007700 | -.001053 | .003874 | -.013544 | -.001141 |
| 41 | .037745 | -.001400 | -.005170 | .013327 | -.015572 | .001211 |
| 42 | .028140 | -.002192 | -.007887 | .026558 | -.018971 | .002553 |
| 43 | .014688 | -.002122 | -.010098 | .025453 | -.015753 | .000954 |
| 44 | .010332 | -.000494 | -.017099 | .017780 | -.004396 | -.001980 |
| 45 | .010236 | .000777 | -.020692 | .008959 | .004200 | -.005590 |
| 46 | .008785 | .006251 | -.024913 | -.002767 | .009900 | -.009819 |
| 47 | .008495 | .016926 | -.030510 | -.016604 | .018673 | -.017012 |
| 48 | .001017 | .021631 | -.031383 | -.013596 | .014042 | -.017530 |
| 49 | -.010178 | .024209 | -.034198 | -.007363 | .013918 | -.015425 |
| 50 | -.019883 | .031565 | -.044217 | -.001924 | .016087 | -.004521 |
| 51 | -.030717 | .040481 | -.057181 | -.017723 | .027046 | .000441 |
| 52 | -.036230 | .045577 | -.068995 | -.036448 | .042823 | .004104 |
| 53 | -.037458 | .044320 | -.072105 | -.036410 | .045943 | .005316 |
| 54 | -.036479 | .036734 | -.069640 | -.024774 | .043358 | .001012 |
| 55 | -.038038 | .031567 | -.065629 | -.010446 | .036403 | .003318 |
| 56 | -.038188 | .028023 | -.058746 | -.001323 | .029569 | .004579 |
| 57 | -.040636 | .019260 | -.045441 | .003160 | .023284 | .002127 |
| 58 | -.040938 | .007984 | -.030093 | .007315 | .021552 | -.001355 |
| 59 | -.040492 | -.003671 | -.012996 | -.001841 | .021535 | -.009339 |
| 60 | -.040447 | -.008393 | -.002181 | -.003790 | .023636 | -.015965 |

RUN NO 90C 46M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.92010 10E 00 | 0.73758 10E 00 | 0.39470 10E 00 | 0.27935 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .870051 | .754122 | .736249 | .794223 |
| 2 | .701513 | .472335 | .457674 | .578051 |
| 3 | .568142 | .293228 | .278047 | .429806 |
| 4 | .460940 | .173032 | .158661 | .318015 |
| 5 | .367943 | .087124 | .084511 | .221669 |
| 6 | .283052 | .020200 | .038102 | .148369 |
| 7 | .201349 | -.049281 | -.017544 | .089498 |
| 8 | .123292 | -.097175 | -.062660 | .041526 |
| 9 | .051172 | -.111504 | -.091528 | -.004843 |
| 10 | -.011216 | -.112602 | -.105007 | -.035594 |
| 11 | -.066043 | -.114789 | -.131118 | -.067704 |
| 12 | -.119490 | -.120721 | -.160313 | -.106164 |
| 13 | -.165724 | -.138015 | -.173662 | -.139985 |
| 14 | -.203663 | -.144585 | -.159416 | -.164471 |
| 15 | -.230475 | -.138382 | -.141230 | -.177535 |
| 16 | -.250731 | -.128648 | -.130304 | -.178909 |
| 17 | -.261061 | -.124978 | -.125271 | -.183426 |
| 18 | -.277589 | -.141392 | -.132605 | -.179760 |
| 19 | -.297024 | -.155496 | -.142177 | -.184388 |
| 20 | -.309961 | -.151708 | -.147452 | -.200885 |
| 21 | -.321548 | -.148840 | -.148846 | -.215139 |
| 22 | -.327795 | -.160038 | -.151486 | -.228808 |
| 23 | -.331648 | -.165253 | -.153669 | -.240822 |
| 24 | -.328505 | -.152331 | -.157495 | -.242281 |
| 25 | -.315466 | -.143488 | -.170229 | -.246708 |
| 26 | -.294231 | -.133500 | -.180558 | -.261055 |
| 27 | -.271330 | -.123912 | -.173405 | -.259032 |
| 28 | -.241495 | -.118886 | -.132625 | -.235283 |
| 29 | -.214624 | -.112960 | -.088923 | -.201879 |
| 30 | -.186957 | -.090326 | -.052376 | -.166183 |
| 31 | -.153937 | -.054856 | -.016774 | -.121491 |
| 32 | -.115255 | -.019683 | -.000430 | -.080565 |
| 33 | -.074590 | .018083 | .026016 | -.041957 |
| 34 | -.033406 | .052183 | .038144 | -.014550 |
| 35 | -.07192 | .075982 | .043470 | .012385 |
| 36 | .044687 | .089131 | .048641 | .030678 |
| 37 | .073935 | .094582 | .061531 | .037786 |
| 38 | .093616 | .085121 | .088822 | .041087 |
| 39 | .100554 | .071400 | .110794 | .049113 |
| 40 | .103481 | .059953 | .106177 | .057484 |
| 41 | .114920 | .047858 | .097057 | .072271 |
| 42 | .121717 | .037147 | .092450 | .082201 |
| 43 | .118841 | .026678 | .096882 | .084520 |
| 44 | .113935 | .013461 | .092232 | .087005 |
| 45 | .110847 | .024887 | .093018 | .099351 |
| 46 | .104597 | .024286 | .087855 | .107942 |
| 47 | .097327 | .014757 | .072656 | .102229 |
| 48 | .089123 | .019922 | .054005 | .090410 |
| 49 | .077284 | .030905 | .033243 | .079039 |
| 50 | .059431 | .032190 | .013192 | .070390 |
| 51 | .042016 | .026590 | .000410 | .062714 |
| 52 | .031756 | .022769 | .000398 | .058469 |
| 53 | .029615 | .018654 | .013141 | .054349 |
| 54 | .026192 | .010516 | .018525 | .039510 |
| 55 | .008581 | .002017 | .009152 | .022355 |
| 56 | -.008788 | -.003610 | -.008229 | .018103 |
| 57 | -.024212 | -.002148 | -.022182 | .017253 |
| 58 | -.039629 | -.003531 | -.035874 | .022258 |
| 59 | -.056937 | -.010666 | -.057208 | .014893 |
| 60 | -.069896 | -.022474 | -.068545 | -.003774 |

RUN NO 90C 46M 6-18-63 1721-1836(EST)
 61 PCINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .000542 | -.021330 | .014654 | .012159 | -.000601 | -.005540 |
| 1 | .071986 | -.301895 | .225311 | -.123244 | .045143 | -.110210 |
| 2 | .124463 | -.552219 | .389136 | -.577010 | .114738 | -.217499 |
| 3 | .102720 | -.675942 | .430444 | -.721002 | .129587 | -.270494 |
| 4 | .006368 | -.395975 | -.11518 | -.221071 | .049224 | -.171770 |
| 5 | -.028673 | -.231035 | .095827 | .034570 | .015321 | -.123754 |
| 6 | -.021214 | -.239561 | .101015 | -.046924 | .021279 | -.131821 |
| 7-8 | .011405 | -.162281 | .075194 | -.318118 | .024686 | -.098895 |
| 9-11 | .015832 | -.052886 | .025157 | -.241260 | -.003178 | -.053859 |
| 12-15 | .004422 | -.047581 | .014972 | -.268641 | .012543 | -.042714 |
| 16-20 | -.008046 | -.024273 | .005117 | -.025186 | .002328 | -.025209 |
| 21-27 | -.005986 | -.013967 | .001175 | -.040643 | -.001526 | -.017763 |
| 28-36 | -.001983 | -.006913 | .000771 | -.021833 | -.000926 | -.010733 |
| 37-47 | -.001029 | -.004228 | -.000680 | -.019024 | -.001589 | -.005632 |
| 48-60 | -.000331 | -.002365 | -.000679 | -.003799 | -.000858 | -.003637 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-03 | 10E-02 | 10E-03 | 10E-03 |
| 1 | -.025053 | .149816 | .557610 | .254528 | .097622 | -.322994 |
| 2 | -.105992 | .536046 | .060369 | .251389 | .342888 | -.571949 |
| 3 | -.103206 | .831994 | -.441115 | .183672 | .324186 | -.741259 |
| 4 | -.007819 | .442805 | -.101205 | -.025610 | .601954 | -.470913 |
| 5 | .003787 | .093181 | .198902 | -.217341 | .182226 | -.256087 |
| 6 | -.017059 | -.109547 | .059781 | -.228532 | .465112 | -.285943 |
| 7-8 | -.004589 | -.064792 | -.112181 | -.129416 | .348928 | -.168181 |
| 9-11 | .007211 | -.163457 | .124501 | .097642 | .094417 | -.078089 |
| 12-15 | .002140 | .003850 | -.010378 | .050873 | -.041464 | -.077566 |
| 16-20 | -.001631 | -.019719 | .000729 | -.051314 | .060980 | -.009292 |
| 21-27 | -.001913 | .015452 | .012491 | -.027003 | .037833 | -.050557 |
| 28-36 | -.000743 | .018226 | -.019260 | .003360 | .011608 | -.021234 |
| 37-47 | -.001748 | .007339 | .006900 | -.022957 | .001784 | -.021302 |
| 48-60 | -.000836 | -.003255 | .003006 | .000154 | -.002117 | -.011625 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-01 | 10E-01 | 10E-03 |
| 0 | .009476 | .017895 | .010137 | .019231 |
| 1 | .111523 | .352987 | .169147 | .257924 |
| 2 | .170217 | .656146 | .350707 | .401394 |
| 3 | .190252 | .888126 | .486799 | .442061 |
| 4 | .108326 | .673974 | .350442 | .260735 |
| 5 | .055507 | .472547 | .252560 | .166578 |
| 6 | .049828 | .510346 | .271672 | .174183 |
| 7-8 | .033342 | .434151 | .219831 | .129365 |
| 9-11 | .017607 | .279448 | .124818 | .076456 |
| 12-15 | .013292 | .173656 | .106654 | .056879 |
| 16-20 | .008341 | .117078 | .067824 | .033220 |
| 21-27 | .005404 | .092825 | .049829 | .023861 |
| 28-36 | .003261 | .052431 | .028573 | .017354 |
| 37-47 | .001932 | .034519 | .021307 | .011241 |
| 48-60 | .001224 | .020317 | .013179 | .007715 |

RUN NO 90C 6M 6-18-63 1721-1836(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|--------------------|-------------------|--------------------|--------------------|
| | 0.51106 10E 00 | 0.34883 10E 00 | 0.40829 10E -01 | 0.22187 10E 00 | 0.25969 10E -01 | 0.17725 10E -01 |
| 0 | .041027 | -.632128 | .355842 | -.041084 | .091792 | -.423240 |
| 1 | .016774 | -.148973 | .135748 | -.010298 | .044415 | -.022520 |
| 2 | -.027729 | .051288 | .007845 | .052048 | .003353 | .046280 |
| 3 | -.010161 | .099868 | -.028927 | .000486 | .025982 | .081830 |
| 4 | .009514 | -.016909 | .025297 | -.060895 | .035572 | -.004013 |
| 5 | .037229 | .042297 | .010546 | -.047720 | .039964 | -.005637 |
| 6 | .004473 | .118764 | -.026875 | .064743 | -.012335 | .039290 |
| 7 | .014441 | .095520 | -.041782 | -.008322 | -.006093 | .062970 |
| 8 | .012464 | -.024229 | .012149 | .005111 | -.009656 | -.032638 |
| 9 | .014963 | -.068769 | .053027 | -.018495 | .032895 | -.094174 |
| 10 | -.010293 | .077270 | -.046731 | .028528 | .000210 | .031318 |
| 11 | -.007887 | .136706 | -.076413 | .022211 | -.001962 | .085791 |
| 12 | -.005059 | .066192 | -.056556 | -.011543 | .015523 | .030637 |
| 13 | -.05429 | .009854 | .031747 | -.009134 | .025751 | -.020290 |
| 14 | -.061014 | .064020 | -.077184 | .029911 | -.027043 | .012352 |
| 15 | -.055580 | -.019860 | -.084947 | .100074 | -.083911 | .036212 |
| 16 | -.037508 | -.042760 | -.038883 | .002708 | -.029189 | .036669 |
| 17 | -.013154 | -.045087 | -.026600 | .020078 | -.001021 | .009448 |
| 18 | .000394 | -.007530 | -.034582 | .001556 | -.008352 | .001828 |
| 19 | .034968 | -.022095 | -.061771 | -.020467 | -.029762 | -.021455 |
| 20 | .004965 | .006443 | -.047339 | -.007765 | -.058775 | .033136 |
| 21 | .035044 | -.029656 | .004575 | -.034576 | .036928 | -.011795 |
| 22 | .034478 | -.062756 | .057772 | .000338 | .006457 | .013649 |
| 23 | .076910 | -.030031 | .052860 | -.097263 | .011978 | .012783 |
| 24 | .008620 | .016002 | .066344 | .016815 | -.028777 | -.020020 |
| 25 | .005228 | .007653 | .055334 | .028060 | -.052654 | -.038920 |
| 26 | .052058 | .009841 | .023106 | -.079310 | -.001069 | -.033473 |
| 27 | .081327 | -.020390 | .012034 | -.078134 | -.015518 | .005861 |
| 28 | -.051140 | .035371 | .019635 | .056194 | -.065828 | .048587 |
| 29 | -.016500 | .065770 | .028561 | .010918 | -.028093 | -.021958 |
| 30 | .000558 | -.011473 | .030894 | .028542 | -.002400 | .012891 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E -02 | 10E -01 | 10E -02 | 10E -02 | 10E -03 | 10E -03 |
| 0 | -.009346 | -.001266 | .006420 | .022679 | .105781 | .003679 |
| 1 | .154915 | -.035449 | .111035 | -.009475 | .554802 | -.144037 |
| 2 | .462827 | -.088476 | .145446 | -.153778 | .347428 | -.278246 |
| 3 | .152142 | -.144743 | .106782 | -.083455 | .126125 | -.217723 |
| 4 | -.539611 | -.123872 | .049154 | .107590 | .040585 | -.179728 |
| 5 | -.239551 | -.097407 | .072818 | .027656 | .163636 | -.250190 |
| 6 | .239544 | -.120632 | .086679 | -.028543 | .161240 | -.359525 |
| 7 | .159357 | -.156097 | .097481 | .104969 | -.026788 | -.435564 |
| 8 | -.007467 | -.146034 | .089897 | .150526 | -.091257 | -.404137 |
| 9-11 | .265526 | -.071146 | .054654 | -.025113 | .081674 | -.253570 |
| 12-14 | .280462 | -.158359 | .099840 | -.263549 | .223796 | -.618512 |
| 15-21 | .084860 | -.075806 | .036379 | -.073118 | .058942 | -.259474 |
| 22-30 | -.020274 | -.075347 | .034156 | .017370 | .027379 | -.396933 |

RUN NO 90C 46M 6-18-63 1721-1836(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.51106 10E 00 | 0.34883 10E 00 | 0.40829 10E-01 | 0.22187 10E 00 | 0.25969 10E-01 | 0.17725 10E-01 |
| 1 | -.028135 | .031268 | -.003109 | .004714 | .039099 | -.061260 |
| 2 | -.015869 | .008287 | -.013662 | .017671 | .048487 | -.000108 |
| 3 | .009420 | .019438 | .013347 | .023238 | .020613 | -.018955 |
| 4 | .015733 | .020134 | -.031105 | -.044168 | .040218 | .005670 |
| 5 | -.012093 | .038092 | -.062819 | .006256 | .050406 | -.015486 |
| 6 | -.062165 | .016785 | -.047010 | -.057416 | .075424 | .006092 |
| 7 | .025670 | -.018591 | .005279 | .024228 | -.001295 | .008902 |
| 8 | .001382 | -.008839 | .029906 | -.010107 | -.001937 | -.014074 |
| 9 | .007866 | .022740 | .012643 | -.025948 | .011816 | -.013359 |
| 10 | .053353 | .021313 | .027161 | .040231 | .021746 | -.017785 |
| 11 | .030914 | .045600 | .019806 | .032174 | .011723 | .030495 |
| 12 | -.046390 | .021863 | .012219 | -.040161 | .090109 | .017957 |
| 13 | -.080039 | .012298 | .019457 | -.037602 | .041550 | .012311 |
| 14 | .006118 | .008685 | .029853 | .017661 | .022374 | -.000725 |
| 15 | .003027 | -.006806 | .033191 | .031099 | .029542 | .007892 |
| 16 | .000115 | -.036340 | .013947 | -.036471 | -.000836 | .046606 |
| 17 | -.032167 | .029208 | -.058346 | .028964 | -.011219 | .055986 |
| 18 | -.034340 | .027152 | -.051651 | .030431 | .029966 | .052823 |
| 19 | -.031655 | -.008840 | -.044669 | -.020690 | .052783 | .038458 |
| 20 | -.029763 | .007492 | -.055821 | -.081678 | .060171 | .047217 |
| 21 | .031773 | -.023690 | -.077187 | .002056 | .002913 | .090376 |
| 22 | .030308 | -.019375 | -.029969 | -.001215 | .068615 | -.001432 |
| 23 | .011657 | -.050187 | .014933 | .025080 | .068623 | -.032334 |
| 24 | -.009741 | -.054939 | -.005046 | -.010608 | .103816 | -.030542 |
| 25 | -.038707 | -.059151 | -.004651 | -.061966 | .104653 | -.009210 |
| 26 | .002406 | .025863 | -.021916 | .027031 | .029244 | -.031752 |
| 27 | .044065 | .006023 | -.036305 | .054141 | -.064694 | -.021387 |
| 28 | .054463 | .008868 | -.029138 | .015747 | -.055113 | -.011531 |
| 29 | -.022429 | .011095 | -.034481 | -.005260 | -.002171 | .053469 |
| 30 | .039669 | .033003 | .034195 | .031020 | -.009065 | .006690 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-02 | 10E-03 | 10E-03 |
| 1 | -.345620 | .370388 | -.121893 | -.085732 | .826286 | .181834 |
| 2 | -.001642 | .324445 | .078453 | -.039626 | .316431 | -.092346 |
| 3 | .101344 | .107671 | -.375420 | -.065978 | .253597 | -.143100 |
| 4 | -.225838 | .069497 | -.649603 | -.051652 | .188754 | .020941 |
| 5 | -.351672 | .115335 | -.131879 | .014949 | .202342 | -.038309 |
| 6 | -.105789 | .181705 | .112593 | .018034 | .305688 | -.077915 |
| 7 | .130065 | .294971 | .028937 | .096190 | .095719 | -.025104 |
| 8 | .382082 | .034358 | .297012 | .215556 | .125826 | -.095490 |
| 9-11 | -.278155 | -.119612 | .208619 | .041835 | .013494 | -.073905 |
| 12-14 | -.159678 | .131609 | -.193730 | .069794 | .162557 | -.066400 |
| 15-21 | -.016697 | .050468 | -.028997 | -.074753 | .017552 | -.071403 |
| 22-30 | -.023788 | .107794 | .086727 | .090096 | -.067538 | -.092370 |

RUN NO 90C 46M 6-18-63 1721-1836(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.80350 10E 00 | 0.32506 10E 00 | 0.15144 10E 00 | 0.20747 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .407191 | .003984 | .023711 | .477927 |
| 2 | .031785 | -.071643 | -.093939 | .215447 |
| 3 | -.063325 | -.083879 | -.127579 | .149044 |
| 4 | -.002909 | .019215 | .026947 | .129195 |
| 5 | -.074267 | -.031106 | -.045877 | .068525 |
| 6 | -.162016 | .007737 | -.105403 | -.014608 |
| 7 | -.142244 | -.003515 | -.130353 | -.045147 |
| 8 | -.070506 | -.044825 | .040773 | -.053298 |
| 9 | -.065341 | -.017018 | .124398 | -.024027 |
| 10 | -.168554 | -.068251 | -.032964 | -.113400 |
| 11 | -.149014 | -.082609 | -.187059 | -.205281 |
| 12 | -.066378 | .021523 | -.088593 | -.158121 |
| 13 | -.083674 | .019296 | -.007414 | -.141298 |
| 14 | -.119120 | -.032297 | -.035887 | -.188707 |
| 15 | -.0644587 | -.061517 | .035070 | -.217741 |
| 16 | .025509 | .078306 | .007834 | -.173973 |
| 17 | .054149 | -.005441 | .046526 | -.079014 |
| 18 | -.004756 | -.004018 | .029338 | -.016384 |
| 19 | -.024278 | .033010 | .109466 | .007976 |
| 20 | .030930 | -.022076 | -.098492 | .049726 |
| 21 | .083031 | -.006633 | .025603 | .073796 |
| 22 | .103262 | .039651 | .045843 | .027308 |
| 23 | .084060 | -.008691 | .032072 | .012552 |
| 24 | .009516 | .028563 | -.040576 | .036376 |
| 25 | -.078563 | -.090050 | .003097 | .012537 |
| 26 | -.046111 | -.085592 | .033872 | -.035695 |
| 27 | .024811 | -.073723 | .016700 | -.031280 |
| 28 | .021674 | .072644 | -.071476 | -.142882 |
| 29 | -.009849 | -.057717 | -.119800 | -.060785 |
| 30 | -.029050 | -.013466 | -.028475 | -.033912 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-03 |
| 0 | .021522 | .020935 | .002324 | .048057 |
| 1 | .320974 | .097841 | .019218 | .282041 |
| 2 | .571687 | .093268 | .037412 | .276788 |
| 3 | .786295 | .122272 | .061329 | .238963 |
| 4 | .641565 | .113579 | .054933 | .116763 |
| 5 | .508641 | .091812 | .045131 | .091144 |
| 6 | .496239 | .094712 | .063118 | .116466 |
| 7 | .485965 | .110930 | .086507 | .095250 |
| 8 | .461225 | .136036 | .077627 | .073086 |
| 9-11 | .350625 | .153044 | .041148 | .066673 |
| 12-14 | .392132 | .147491 | .105651 | .085103 |
| 15-21 | .239535 | .153655 | .063502 | .051716 |
| 22-30 | .170412 | .186485 | .083522 | .044087 |

RUN NO 90C 15M 6-18-63 1721-1836(EST)
 RUN NO 90C 46M 6-18-63 1721-1836(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .189760 | .143505 | .073802 | .231491 |
| 1 | .236383 | .462691 | .165442 | .418453 |
| 2 | .268810 | .495033 | .342744 | .462077 |
| 3 | .269773 | .510732 | .336287 | .432480 |
| 4 | .188702 | .531583 | .159301 | .337706 |
| 5 | .114333 | .490512 | .057139 | .278393 |
| 6 | .091970 | .435101 | .195403 | .287736 |
| 7-8 | .154122 | .259870 | .125905 | .250827 |
| 9-11 | .075346 | .100934 | .190735 | .223661 |
| 12-15 | .052654 | .150588 | .164700 | .125090 |
| 16-20 | .130675 | .119952 | .069610 | .039657 |
| 21-27 | .113881 | .101403 | .083541 | .059150 |
| 28-36 | .107979 | .114678 | .130946 | .118188 |
| 37-47 | .097450 | .126072 | .060109 | .078087 |
| 48-60 | .067654 | .096765 | .079790 | .110456 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .490595 | .647118 | .070484 | .757289 |
| 1 | .477977 | .408059 | .488069 | .699380 |
| 2 | .580637 | .172146 | .452306 | .603588 |
| 3 | .641805 | .073169 | .359598 | .550439 |
| 4 | .582948 | .104567 | .239698 | .401980 |
| 5 | .383456 | .381162 | .416918 | .266947 |
| 6 | .308759 | .591408 | .416707 | .368332 |
| 7 | .272191 | .621238 | .111914 | .397349 |
| 8 | .346017 | .445061 | .229173 | .308161 |
| 9-11 | .329704 | .412060 | .294109 | .352769 |
| 12-14 | .398445 | .525513 | .559525 | .552562 |
| 15-21 | .262708 | .444658 | .282601 | .362072 |
| 22-30 | .269022 | .350798 | .265166 | .216910 |

RUN NO 900 46M 6-18-63 1840-1956(EST)

GROSS STATISTICS

CLEAR SIGMA A 9.20 DEG
STABLE WIND SPEED 6.14 M/SEC
WIND DIRECTION 238 DEG
SOLAR RAD. 0.02 LY/MIN SIGMA E 4.6 DEG

WITH NO WITH 301 POINT WITH 61 POINT 301 PT RUN MEAN
RUNNING MEAN RUNNING MEAN RUNNING MEAN 10 PT BLOCK AVG

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.10983E 01 | 0.69996E 00 | 0.54285E 00 | 0.44028E-00 |
| V | 0.96863E 00 | 0.54735E 00 | 0.47523E-00 | 0.26608E-00 |
| W | 0.23672E-00 | 0.23415E-00 | 0.21206E-00 | 0.79528E-01 |
| T | 0.43058E-00 | 0.40477E-02 | 0.25255E-02 | 0.26512E-02 |
| E | 0.11518E 01 | 0.74087E 00 | 0.61507E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.17069 | 0.13626 | 0.12000 | 0.10807 |
| V | 0.16029 | 0.12049 | 0.11228 | 0.08401 |
| W | 0.07924 | 0.07881 | 0.07500 | 0.04593 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.22963E-00 | -0.80825E-02 | -0.40974E-02 | 0.44262E-02 |
| U,W | -0.19553E-00 | -0.19356E-00 | -0.14862E-00 | -0.11010E-00 |
| U,T | -0.36521E-01 | 0.24867E-01 | 0.15680E-01 | 0.18796E-01 |
| V,W | 0.25394E-01 | -0.11875E-02 | -0.23593E-02 | 0.35920E-02 |
| V,T | -0.13349E-00 | -0.24508E-02 | -0.28314E-02 | -0.11538E-02 |
| W,T | -0.22184E-01 | -0.11529E-01 | -0.94455E-02 | -0.55912E-02 |
| WE | -0.33772E-02 | 0.24893E-01 | 0.11263E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.22263 | -0.01306 | -0.00807 | 0.01293 |
| U,W | -0.38348 | -0.47811 | -0.43803 | -0.58836 |
| U,T | -0.05311 | 0.46719 | 0.42348 | 0.55015 |
| V,W | 0.05303 | -0.00332 | -0.00743 | 0.02469 |
| V,T | -0.20669 | -0.05207 | -0.08173 | -0.04344 |
| W,T | -0.06949 | -0.37447 | -0.40816 | -0.38505 |

RUN NO 90D 46M 6-18-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.50789 10E 00 | 0.33936 10E 00 | 0.37029 10E-01 | 0.31752 10E 00 | 0.34646 10E-01 | 0.23149 10E-01 |
| 0 | -.008021 | -.437970 | .423151 | -.007422 | -.081588 | -.408131 |
| 1 | -.006308 | -.368272 | .400434 | .001891 | -.070875 | -.327860 |
| 2 | -.005315 | -.264831 | .346122 | .020900 | -.061438 | -.203271 |
| 3 | -.002586 | -.177709 | .281686 | .036414 | -.053123 | -.110452 |
| 4 | .001235 | -.116936 | .221767 | .040818 | -.039192 | -.054415 |
| 5 | .000461 | -.075476 | .167500 | .039510 | -.028226 | -.020455 |
| 6 | .006514 | -.039053 | .120069 | .026692 | -.022954 | .001143 |
| 7 | .012434 | -.007646 | .082012 | .014634 | -.020920 | .017847 |
| 8 | .007623 | .015135 | .042347 | .008578 | -.016600 | .028226 |
| 9 | .000938 | .037231 | .008061 | .008599 | -.014588 | .034188 |
| 10 | -.010026 | .050740 | -.019452 | .013192 | -.017365 | .032033 |
| 11 | -.013389 | .064765 | -.045029 | .009279 | -.012282 | .032763 |
| 12 | -.008456 | .069813 | -.067034 | -.000182 | -.003444 | .034171 |
| 13 | -.000147 | .066063 | -.080624 | -.013018 | .001978 | .039665 |
| 14 | .006174 | .060866 | -.086887 | -.015636 | .008836 | .041922 |
| 15 | .004618 | .063669 | -.098836 | -.010593 | .015895 | .048178 |
| 16 | .001685 | .066814 | -.109227 | -.007983 | .021627 | .047721 |
| 17 | -.002300 | .062623 | -.112052 | -.007667 | .022745 | .040603 |
| 18 | -.007680 | .061455 | -.114966 | -.006973 | .022664 | .032392 |
| 19 | -.013796 | .060899 | -.112718 | -.007862 | .025962 | .028910 |
| 20 | -.013974 | .062139 | -.104899 | -.014853 | .035764 | .030909 |
| 21 | -.007493 | .060848 | -.100315 | -.023077 | .043090 | .026645 |
| 22 | -.002765 | .058135 | -.099383 | -.017672 | .034325 | .030549 |
| 23 | -.009072 | .054863 | -.098697 | -.011465 | .029206 | .033619 |
| 24 | -.016540 | .052211 | -.093382 | -.005828 | .029314 | .031671 |
| 25 | -.019016 | .044423 | -.094429 | -.003578 | .032466 | .029211 |
| 26 | -.015095 | .032250 | -.095609 | -.009608 | .036395 | .035727 |
| 27 | -.007736 | .021120 | -.090716 | -.013902 | .035765 | .044959 |
| 28 | -.002737 | .022098 | -.087849 | -.008751 | .033183 | .049698 |
| 29 | -.000005 | .032116 | -.082355 | -.009360 | .029479 | .049229 |
| 30 | .005005 | .035102 | -.077998 | -.012858 | .025555 | .043253 |
| 31 | .011945 | .032706 | -.073520 | -.022179 | .031782 | .030088 |
| 32 | .025517 | .032506 | -.064298 | -.035361 | .037634 | .024266 |
| 33 | .035513 | .028919 | -.052976 | -.038342 | .034980 | .027897 |
| 34 | .040519 | .024794 | -.041226 | -.026568 | .024057 | .023477 |
| 35 | .042903 | .019631 | -.025184 | -.012873 | .015232 | .012258 |
| 36 | .043703 | .010491 | -.015343 | .002095 | .006392 | .001095 |
| 37 | .036755 | .005024 | -.011266 | .016601 | -.001381 | -.008881 |
| 38 | .026981 | -.002364 | .001899 | .017080 | -.007359 | -.008027 |
| 39 | .014694 | .003961 | .010699 | .012081 | -.012196 | .001867 |
| 40 | .006123 | .020156 | .009945 | .010242 | -.018262 | .011586 |
| 41 | .003395 | .036859 | .009286 | .005504 | -.021872 | .019452 |
| 42 | -.006540 | .039824 | .011532 | -.001931 | -.019119 | .015197 |
| 43 | -.013069 | .035361 | .011749 | -.005215 | -.013953 | .011817 |
| 44 | -.009660 | .026001 | .009372 | -.001708 | -.012276 | .009688 |
| 45 | -.002057 | .015438 | .008874 | -.005888 | -.011475 | .010211 |
| 46 | .004741 | .003614 | .007953 | -.030293 | -.010135 | .008963 |
| 47 | .009466 | -.000280 | .003523 | -.047326 | -.004169 | .005013 |
| 48 | .005369 | -.000739 | -.005042 | -.041407 | .000144 | .007704 |
| 49 | -.000130 | -.001335 | -.017130 | -.033494 | .001720 | .008865 |
| 50 | -.004902 | .003966 | -.024237 | -.020906 | -.001787 | .002250 |
| 51 | -.014118 | .010186 | -.023689 | -.003587 | -.004642 | -.003166 |
| 52 | -.018765 | .019248 | -.022443 | .000888 | -.005424 | .003857 |
| 53 | -.024288 | .025532 | -.020135 | .006549 | -.007617 | .015922 |
| 54 | -.038992 | .024912 | -.020214 | .020198 | -.012468 | .018005 |
| 55 | -.043463 | .019310 | -.017558 | .031844 | -.017566 | .021618 |
| 56 | -.033423 | .010749 | -.011886 | .037138 | -.017662 | .022785 |
| 57 | -.020185 | .013686 | -.008514 | .032903 | -.010174 | .021960 |
| 58 | -.018624 | .018156 | -.005750 | .034701 | -.002394 | .020976 |
| 59 | -.025254 | .012160 | .001412 | .043142 | .006823 | .022019 |
| 60 | -.031641 | -.004493 | .010289 | .042275 | .009799 | .026804 |

RUN NO 90D 46M 6-18-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.50789 10E 00 | 0.33936 10E 00 | 0.37029 10E-01 | 0.31752 10E 00 | 0.34646 10E-01 | 0.23149 10E-01 |
| 1 | .005609 | -.018885 | .048984 | .005127 | -.003817 | -.043428 |
| 2 | .015455 | -.029103 | .086060 | .011110 | -.003727 | -.052158 |
| 3 | .017535 | -.029365 | .107581 | .006335 | -.000547 | -.057833 |
| 4 | .013197 | -.019536 | .116576 | .000782 | .003806 | -.060186 |
| 5 | .015554 | -.011247 | .120078 | .007752 | .005974 | -.063680 |
| 6 | .023793 | -.010913 | .121159 | .025041 | .004463 | -.064755 |
| 7 | .027104 | -.013160 | .117436 | .035794 | .000255 | -.059942 |
| 8 | .019279 | -.016767 | .110969 | .030552 | -.000030 | -.045578 |
| 9 | .006774 | -.019011 | .104423 | .020409 | -.000683 | -.037063 |
| 10 | -.000944 | -.016196 | .101657 | .009881 | .008136 | -.030431 |
| 11 | -.001590 | -.017909 | .104934 | .000038 | .026368 | -.031940 |
| 12 | -.002380 | -.022129 | .106072 | -.002597 | .036456 | -.030714 |
| 13 | .001935 | -.028129 | .107942 | -.000022 | .038819 | -.028083 |
| 14 | .007999 | -.031199 | .103848 | .000039 | .038075 | -.023788 |
| 15 | .014674 | -.025287 | .098240 | -.001608 | .035257 | -.017070 |
| 16 | .018834 | -.022848 | .087603 | .003542 | .031169 | -.013625 |
| 17 | .025633 | -.024343 | .078630 | .019566 | .019745 | -.016564 |
| 18 | .025528 | -.022837 | .073812 | .029712 | .006220 | -.016477 |
| 19 | .021015 | -.021174 | .066834 | .029413 | -.005788 | -.011075 |
| 20 | .015510 | -.015282 | .063787 | .023506 | -.008929 | -.020050 |
| 21 | .015287 | .002917 | .058521 | .007589 | -.008256 | -.02934~ |
| 22 | .016970 | .021772 | .053416 | -.003619 | -.007907 | -.042105 |
| 23 | .017110 | .039737 | .042784 | -.008450 | -.009238 | -.052641 |
| 24 | .011916 | .042717 | .029640 | -.012979 | -.007695 | -.045263 |
| 25 | -.004632 | .038530 | .017235 | -.015732 | -.011676 | -.031985 |
| 26 | -.021870 | .038313 | .012915 | -.020426 | -.018841 | -.026515 |
| 27 | -.028741 | .037693 | .008042 | -.018752 | -.017514 | -.024274 |
| 28 | -.030073 | .036030 | .003974 | -.017865 | -.011756 | -.015408 |
| 29 | -.033431 | .032511 | .004163 | -.022442 | -.008384 | -.009441 |
| 30 | -.033941 | .024520 | .002222 | -.026727 | -.006495 | -.008436 |
| 31 | -.037255 | .016691 | .000229 | -.030452 | -.008703 | -.007630 |
| 32 | -.033435 | .009819 | -.006273 | -.027408 | -.008911 | -.007000 |
| 33 | -.030910 | .003709 | -.017159 | -.027231 | -.007707 | -.002658 |
| 34 | -.027392 | .002866 | -.026559 | -.025812 | -.007628 | -.001871 |
| 35 | -.029414 | .013550 | -.038971 | -.029641 | -.004333 | .001099 |
| 36 | -.028493 | .015742 | -.047379 | -.026408 | .003155 | .006121 |
| 37 | -.024595 | .010924 | -.047007 | -.017579 | .006343 | .009765 |
| 38 | -.018550 | .012292 | -.041918 | -.008727 | .008775 | .007440 |
| 39 | -.015525 | .015815 | -.034729 | -.005853 | .003628 | -.001064 |
| 40 | -.006112 | .016861 | -.033288 | -.007682 | -.002370 | -.000710 |
| 41 | .005044 | .012962 | -.030318 | .015674 | -.001233 | -.001320 |
| 42 | .013955 | .008110 | -.025205 | .016852 | .003691 | -.009166 |
| 43 | .017186 | .006221 | -.019703 | .017088 | .007923 | -.023935 |
| 44 | .019976 | .002939 | -.017772 | .019345 | .009492 | -.026296 |
| 45 | .025952 | -.001345 | -.020266 | .021111 | .010020 | -.010540 |
| 46 | .027847 | -.003141 | -.028713 | .013820 | .011720 | .011662 |
| 47 | .025725 | -.008074 | -.041200 | .009626 | .014736 | .034441 |
| 48 | .017459 | -.014875 | -.048490 | .003345 | .017300 | .052470 |
| 49 | .008108 | -.020572 | -.049634 | .000385 | .012588 | .059686 |
| 50 | -.002192 | -.026307 | -.048656 | -.001045 | .012654 | .053757 |
| 51 | -.002811 | -.026865 | -.049278 | -.002026 | .015884 | .050031 |
| 52 | .002719 | -.020272 | -.052991 | .004170 | .025551 | .047229 |
| 53 | .004069 | -.014638 | -.052521 | .010668 | .030522 | .037249 |
| 54 | .001772 | -.012265 | -.050267 | .010046 | .030389 | .032898 |
| 55 | -.002288 | -.017335 | -.045795 | .003415 | .026541 | .036443 |
| 56 | -.005516 | -.024933 | -.037722 | .002238 | .020047 | .034827 |
| 57 | -.009539 | -.027673 | -.033744 | .007056 | .006013 | .038536 |
| 58 | -.010079 | -.029184 | -.029481 | .005737 | .000184 | .032793 |
| 59 | -.010667 | -.028284 | -.024191 | .008938 | -.000425 | .021935 |
| 60 | -.013130 | -.019873 | -.010894 | .011594 | -.004596 | .007784 |

RUN NO 900 48M 6-18-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.54283 10E 00 | 0.47521 10E 00 | 0.21216 10E 00 | 0.25259 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .844740 | .763700 | .670106 | .820905 |
| 2 | .654794 | .499718 | .317864 | .604199 |
| 3 | .509088 | .324439 | .116707 | .435835 |
| 4 | .378977 | .206927 | .022774 | .315188 |
| 5 | .273209 | .118118 | -.017836 | .230698 |
| 6 | .186466 | .051271 | -.042038 | .161939 |
| 7 | .106433 | -.012163 | -.067669 | .103640 |
| 8 | .042026 | -.062056 | -.087437 | .053736 |
| 9 | -.016540 | -.096722 | -.094538 | .008629 |
| 10 | -.064055 | -.111893 | -.082777 | -.027610 |
| 11 | -.096694 | -.117123 | -.076163 | -.059830 |
| 12 | -.120723 | -.117166 | -.078880 | -.084621 |
| 13 | -.141491 | -.113742 | -.085587 | -.105561 |
| 14 | -.164215 | -.113783 | -.081562 | -.132812 |
| 15 | -.181741 | -.123125 | -.081578 | -.153475 |
| 16 | -.192510 | -.135992 | -.067649 | -.164486 |
| 17 | -.205058 | -.146130 | -.062065 | -.163625 |
| 18 | -.217024 | -.160350 | -.065780 | -.167837 |
| 19 | -.224103 | -.180725 | -.063857 | -.175765 |
| 20 | -.232802 | -.187985 | -.059923 | -.177447 |
| 21 | -.240335 | -.192265 | -.058271 | -.169802 |
| 22 | -.247410 | -.195292 | -.065900 | -.163424 |
| 23 | -.245089 | -.196129 | -.059768 | -.165647 |
| 24 | -.236490 | -.181993 | -.064884 | -.173360 |
| 25 | -.230062 | -.158348 | -.072746 | -.184265 |
| 26 | -.223531 | -.134391 | -.079043 | -.193284 |
| 27 | -.203738 | -.115806 | -.087468 | -.197221 |
| 28 | -.182017 | -.105171 | -.095780 | -.193953 |
| 29 | -.166530 | -.090948 | -.105869 | -.183552 |
| 30 | -.144281 | -.072523 | -.077366 | -.174153 |
| 31 | -.109138 | -.043273 | -.026198 | -.157224 |
| 32 | -.086835 | -.015554 | -.005798 | -.146860 |
| 33 | -.064859 | -.006849 | -.000962 | -.132221 |
| 34 | -.046815 | -.020566 | -.002860 | -.110846 |
| 35 | -.028507 | .035396 | .000526 | -.093673 |
| 36 | -.008359 | .046165 | .010715 | -.069172 |
| 37 | .010355 | .061736 | .006168 | -.040522 |
| 38 | .027024 | .067937 | .001508 | -.017484 |
| 39 | .044011 | .070752 | -.015527 | -.000465 |
| 40 | .056119 | .072994 | -.035535 | .008663 |
| 41 | .058669 | .064999 | -.032657 | .012008 |
| 42 | .051273 | .057485 | -.014209 | .009859 |
| 43 | .047971 | .050578 | .011644 | .008484 |
| 44 | .044829 | .039682 | -.022094 | .002221 |
| 45 | .040466 | .020223 | .026341 | -.011270 |
| 46 | .041883 | .000053 | .020359 | -.016112 |
| 47 | .044795 | -.007574 | .016647 | -.013527 |
| 48 | .046179 | -.001856 | .018545 | -.006744 |
| 49 | .044643 | .001337 | .025019 | .001489 |
| 50 | .035206 | .000685 | .026867 | .011022 |
| 51 | .027901 | -.009322 | .027386 | .013815 |
| 52 | .023313 | -.011771 | .010412 | .009823 |
| 53 | .020291 | -.012799 | .006921 | .005030 |
| 54 | .020892 | -.006087 | .013404 | .006948 |
| 55 | .030579 | -.000351 | .015752 | .006942 |
| 56 | .040982 | .009097 | .024647 | .014309 |
| 57 | .041147 | .020942 | .023045 | .021968 |
| 58 | .034966 | .035775 | .005635 | .028956 |
| 59 | .032382 | .039650 | -.009176 | .041811 |
| 60 | .029897 | .034223 | -.012423 | .060285 |

RUN NO 900 46M 6-18-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .008485 | -.014792 | .024164 | .005479 | -.018161 | -.077118 |
| 1 | -.164114 | -.139626 | .236914 | .258276 | -.466323 | -.715059 |
| 2 | -.081913 | -.164364 | .294089 | .297302 | -.691498 | -.834971 |
| 3 | .212774 | -.185027 | .308910 | .233017 | -.616746 | -.897257 |
| 4 | .082863 | -.166454 | .213200 | .096058 | -.208735 | -.768507 |
| 5 | -.239568 | -.133781 | .144043 | .020511 | -.087022 | -.703148 |
| 6 | -.081251 | -.107353 | .113109 | .033458 | -.122327 | -.703982 |
| 7-8 | .049669 | -.080983 | .057743 | -.112345 | -.057490 | -.527243 |
| 9-11 | -.089513 | -.048041 | .034119 | -.077316 | -.105659 | -.423128 |
| 12-15 | -.035768 | -.031536 | .015751 | -.066695 | -.050496 | -.270585 |
| 16-20 | .040352 | -.021283 | .008466 | -.075760 | -.004729 | -.177032 |
| 21-27 | -.017333 | -.012060 | .002464 | -.000392 | -.005161 | -.098469 |
| 28-36 | .008856 | -.004870 | .001225 | -.009192 | -.008853 | -.046728 |
| 37-47 | -.008345 | -.002916 | -.000656 | .001257 | -.009950 | -.021550 |
| 48-60 | .000096 | -.002005 | .000340 | -.001477 | -.005575 | -.011483 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 1 | -.007715 | .074387 | .170764 | -.038632 | .125741 | -.540248 |
| 2 | .336446 | -.235880 | .183075 | .159548 | .179109 | -.415348 |
| 3 | .483876 | -.457959 | .145012 | .292593 | .280530 | -.256261 |
| 4 | -.007078 | -.241080 | .075745 | .077314 | .122798 | -.202722 |
| 5 | -.193861 | .049912 | .047056 | -.065236 | -.108059 | -.230524 |
| 6 | .186392 | .161289 | .040345 | .086039 | -.210933 | -.299019 |
| 7-8 | .275617 | -.094380 | .029501 | .120616 | -.116723 | -.153203 |
| 9-11 | .026827 | -.081594 | .021786 | -.067762 | .088359 | -.076353 |
| 12-15 | -.065636 | -.079737 | .008847 | -.029608 | -.017897 | -.032309 |
| 16-20 | .041577 | -.050942 | .003540 | .035406 | -.037954 | -.022558 |
| 21-27 | .031501 | .000752 | .001693 | .027949 | .005857 | -.035212 |
| 28-36 | -.027946 | .002527 | -.000051 | -.016052 | .000020 | -.015059 |
| 37-47 | -.008374 | -.003649 | .000038 | -.004027 | -.003405 | -.013344 |
| 48-60 | .000813 | .000231 | .000043 | -.000792 | -.001688 | -.005767 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-03 |
| 0 | .050471 | .019204 | .005926 | .026478 |
| 1 | .588063 | .283456 | .086144 | .300178 |
| 2 | .833031 | .473157 | .126323 | .368346 |
| 3 | .917475 | .614008 | .150307 | .356258 |
| 4 | .602574 | .451645 | .131468 | .235838 |
| 5 | .386017 | .294411 | .122822 | .179548 |
| 6 | .343085 | .298629 | .129353 | .163062 |
| 7-8 | .257250 | .277874 | .115035 | .102951 |
| 9-11 | .141662 | .168844 | .090532 | .078495 |
| 12-15 | .085244 | .101395 | .067516 | .050265 |
| 16-20 | .056313 | .079538 | .051284 | .033750 |
| 21-27 | .033117 | .052061 | .035810 | .019756 |
| 28-36 | .023152 | .032496 | .020635 | .011522 |
| 37-47 | .017047 | .020787 | .013070 | .007780 |
| 48-60 | .008403 | .013605 | .008616 | .005400 |

RUN NO 90D 46M 6-18-63 1840-1956(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.34229 10E 00 | 0.18718 10E 00 | 0.34151 10E-01 | 0.14550 10E 00 | 0.26545 10E-01 | 0.14516 10E-01 |
| 0 | .012931 | -.588168 | .550385 | .024688 | -.043464 | -.385160 |
| 1 | -.004323 | -.181110 | .275684 | .024221 | -.002105 | -.103285 |
| 2 | -.045001 | -.055666 | .088730 | .035037 | .015633 | -.035109 |
| 3 | -.019950 | .027454 | .016693 | -.000110 | .039611 | .032384 |
| 4 | .016602 | .085525 | -.023601 | .018989 | .026518 | .062104 |
| 5 | -.005597 | .123417 | -.082064 | -.014046 | -.003696 | .077579 |
| 6 | -.029607 | .074548 | -.073600 | .062037 | -.026860 | .065483 |
| 7 | .064239 | .008771 | -.067560 | -.037841 | -.005680 | -.002823 |
| 8 | -.032523 | -.016060 | -.094857 | .020582 | -.102430 | .004490 |
| 9 | -.014512 | .062934 | -.100606 | -.019309 | -.023265 | .023627 |
| 10 | .070352 | .036202 | -.143135 | -.030830 | .017707 | .064476 |
| 11 | .098839 | .069908 | -.159390 | -.052175 | .013535 | .081276 |
| 12 | .025759 | .004316 | -.151886 | -.013287 | .010086 | .016456 |
| 13 | -.002818 | .048371 | -.131872 | -.028098 | -.024718 | .035387 |
| 14 | -.044481 | .009814 | -.077396 | -.000293 | -.043418 | .001464 |
| 15 | -.026980 | .049253 | -.058339 | .003589 | -.035947 | .031573 |
| 16 | -.031278 | -.037037 | .002532 | .034079 | -.006204 | -.048946 |
| 17 | -.002869 | -.030590 | .014316 | .026576 | -.003734 | -.072984 |
| 18 | -.007801 | -.000169 | .005586 | -.015593 | -.000286 | -.032604 |
| 19 | -.031346 | .027910 | .044956 | -.059742 | -.029295 | -.036773 |
| 20 | -.023605 | .017042 | .081982 | .005819 | .004372 | -.033616 |
| 21 | .070324 | .004126 | .087456 | -.015787 | .089309 | -.021400 |
| 22 | .042935 | .021173 | .097706 | -.016025 | .037072 | .020456 |
| 23 | .010157 | .074162 | .116593 | -.054945 | .021253 | -.008402 |
| 24 | -.050718 | .005966 | .126737 | .027680 | -.019298 | -.022966 |
| 25 | -.028709 | -.084786 | .158319 | .021496 | -.011964 | -.082454 |
| 26 | -.019437 | -.044418 | .115253 | .052704 | .015324 | -.046755 |
| 27 | .015310 | .025798 | .057720 | -.009372 | .055901 | .055724 |
| 28 | -.057640 | .002541 | .038544 | .016846 | .023772 | .013667 |
| 29 | -.089058 | .022686 | .003653 | .049526 | .012098 | .074376 |
| 30 | -.067508 | -.021254 | -.005442 | .058404 | .002362 | .029368 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .023435 | -.040307 | -.008952 | .007204 | -.082720 | -.012049 |
| 1 | .014798 | -.432886 | .051921 | .117380 | -.143794 | -.061509 |
| 2 | -.164662 | -.584206 | .210449 | .137418 | .149379 | -.244781 |
| 3 | -.364521 | -.777682 | .284753 | .125834 | .211375 | -.487351 |
| 4 | -.281714 | -.825678 | .169822 | .076513 | .074000 | -.428052 |
| 5 | .182892 | -.744434 | .108403 | -.048931 | .099619 | -.289937 |
| 6 | .327477 | -.776533 | .111750 | -.089700 | .020567 | -.359153 |
| 7 | -.060471 | -.892854 | .132621 | .043121 | -.289911 | -.492061 |
| 8 | -.230238 | -.766721 | .125937 | .090684 | .394881 | -.421638 |
| 9-11 | .198185 | -.455469 | .070685 | .018670 | -.090285 | -.224215 |
| 12-14 | -.025925 | -.215840 | .056848 | -.009010 | -.112391 | -.127637 |
| 15-21 | .126277 | -.368268 | .050817 | -.009673 | .004410 | -.182066 |
| 22-30 | -.028547 | -.397529 | .030790 | -.005041 | -.081774 | -.225779 |

RUN NO 90D 46M 6-18-63 1840-1956(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.34229 10E 00 | 0.18718 10E 00 | 0.34151 10E-01 | 0.14550 10E 00 | 0.26545 10E-01 | 0.14516 10E-01 |
| 1 | -.047169 | -.025422 | .133899 | .000187 | .081258 | -.018455 |
| 2 | -.001615 | .003673 | .121074 | .002626 | .161961 | -.034241 |
| 3 | -.084783 | .040911 | .065797 | -.053003 | .162610 | -.072421 |
| 4 | -.057429 | .014169 | -.001755 | -.001004 | .211608 | -.011697 |
| 5 | -.008439 | -.040746 | -.049858 | .085038 | .196466 | .066353 |
| 6 | -.032560 | -.084279 | -.051295 | .068537 | .186239 | .109338 |
| 7 | -.043163 | -.032744 | -.047100 | .010314 | .227188 | .063242 |
| 8 | -.010815 | -.032641 | -.050536 | .042166 | .201340 | .071103 |
| 9 | -.047228 | -.031959 | -.041839 | .021771 | .142903 | .043187 |
| 10 | -.001595 | .007272 | -.054068 | .092801 | .116896 | .020606 |
| 11 | -.008545 | -.021610 | -.013665 | .024325 | .131927 | .054573 |
| 12 | .004417 | -.016028 | .016837 | -.014869 | .135620 | .028424 |
| 13 | .057098 | -.020668 | .000048 | .025832 | .046029 | .017701 |
| 14 | .081605 | .044892 | -.010712 | .022006 | -.036540 | -.021463 |
| 15 | .055630 | .030100 | -.0C2632 | .039097 | -.047283 | -.021554 |
| 16 | .085756 | .047C18 | -.006546 | .036561 | -.068904 | .021780 |
| 17 | .090747 | .049300 | -.000689 | -.025323 | -.084009 | -.008033 |
| 18 | .113007 | .045612 | -.021675 | -.044829 | -.065118 | -.024159 |
| 19 | .095930 | -.010130 | -.010558 | -.029165 | -.056510 | -.023556 |
| 20 | .081707 | .039535 | .015527 | -.033802 | -.102634 | -.056809 |
| 21 | .056663 | .034985 | .011937 | -.027585 | -.08417 | -.064936 |
| 22 | .067467 | .033904 | .021400 | -.024364 | -.082290 | .063615 |
| 23 | .057542 | .049586 | .040894 | -.062806 | .023430 | -.040150 |
| 24 | -.011629 | -.009331 | .004583 | -.011942 | .055028 | -.011182 |
| 25 | -.127368 | -.022093 | -.008670 | -.066860 | .106703 | -.000741 |
| 26 | -.127299 | -.006109 | -.004477 | -.036272 | .087443 | -.041473 |
| 27 | -.086369 | -.020025 | -.019518 | -.031935 | .065269 | -.006348 |
| 28 | -.057602 | -.071198 | .000874 | .010592 | .102337 | .054402 |
| 29 | -.045286 | -.110622 | -.013109 | .001372 | .103725 | .081344 |
| 30 | -.008759 | -.080109 | -.036110 | .043396 | .076133 | .079175 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-02 | 10E-02 | 10E-03 |
| 1 | .504716 | -.053187 | -.450767 | .285952 | .233990 | .246791 |
| 2 | -.677846 | -.264095 | -.294395 | .273228 | .247795 | .289314 |
| 3 | -.955092 | -.217595 | .048775 | .071708 | .196368 | .074284 |
| 4 | -.121538 | .065232 | .430038 | -.069594 | .055910 | -.187828 |
| 5 | -.056731 | .156436 | .743459 | -.063317 | .021984 | -.276929 |
| 6 | -.185087 | .133057 | .941192 | -.107127 | .030700 | -.360952 |
| 7 | -.222520 | .12136 | .792538 | -.142916 | .025888 | -.340172 |
| 8 | -.220986 | .155950 | .623871 | -.084328 | .012618 | -.273802 |
| 9-11 | .003533 | -.050942 | .565304 | -.075131 | .012910 | -.148221 |
| 12-14 | .098237 | -.153100 | .218503 | .172547 | -.006502 | .005117 |
| 15-21 | -.114417 | -.029273 | .124756 | .001544 | .005348 | -.047277 |
| 22-30 | -.224977 | -.007465 | .060620 | -.053156 | -.011293 | -.017909 |

RUN NO 90D 46M 6-18-63 1840-1956(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| H | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.44036 10E 03 | 0.26606 10E 00 | 0.79566 10E-01 | 0.26485 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .387876 | .298173 | .105686 | .573194 |
| 2 | .045020 | .106237 | .072727 | .315856 |
| 3 | -.042838 | .135431 | -.025840 | .196542 |
| 4 | -.066167 | .123808 | -.048485 | .104899 |
| 5 | -.124980 | .051104 | -.029041 | .082680 |
| 6 | -.114534 | -.013758 | -.051493 | .048085 |
| 7 | -.115769 | -.064836 | -.022501 | .034581 |
| 8 | -.111623 | -.029301 | -.010526 | -.062208 |
| 9 | -.076021 | -.067754 | -.081366 | -.149203 |
| 10 | -.009775 | -.134612 | -.076980 | -.214334 |
| 11 | -.047645 | -.071204 | -.162912 | -.214177 |
| 12 | -.098411 | -.096902 | -.087182 | -.213941 |
| 13 | -.090142 | -.164734 | -.141918 | -.243451 |
| 14 | -.039149 | -.128849 | -.072196 | -.207650 |
| 15 | -.020659 | -.129237 | -.110780 | -.187051 |
| 16 | .029167 | -.122883 | .021284 | -.085985 |
| 17 | .003852 | -.072452 | -.058072 | -.017819 |
| 18 | -.051224 | -.070668 | .041081 | -.045712 |
| 19 | -.012448 | -.033035 | -.033463 | .022849 |
| 20 | -.002082 | -.018739 | .002082 | .104620 |
| 21 | .003428 | .031638 | .010914 | .133141 |
| 22 | .049790 | .051768 | -.011998 | .141821 |
| 23 | .035638 | .051593 | -.070598 | .157714 |
| 24 | .030932 | .035372 | .084185 | .128417 |
| 25 | .045035 | -.011079 | .099919 | .110206 |
| 26 | .013190 | .083445 | .090402 | .081048 |
| 27 | .028733 | .028931 | -.023410 | .039394 |
| 28 | .067502 | .042367 | .055432 | .031540 |
| 29 | -.007384 | -.007185 | -.021924 | -.078045 |
| 30 | -.050091 | -.005136 | .001574 | -.090536 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-03 |
| 0 | .025562 | .045253 | .007914 | .080942 |
| 1 | .198184 | .279162 | .320331 | .396056 |
| 2 | .274817 | .279758 | .501952 | .413096 |
| 3 | .358840 | .236298 | .529154 | .386190 |
| 4 | .350394 | .130854 | .348529 | .169720 |
| 5 | .329175 | .109653 | .258902 | .094907 |
| 6 | .305686 | .107993 | .327256 | .118873 |
| 7 | .290339 | .086624 | .427344 | .131075 |
| 8 | .244779 | .076508 | .387434 | .133485 |
| 9-11 | .188569 | .087212 | .297187 | .105502 |
| 12-14 | .180213 | .103992 | .269446 | .051294 |
| 15-21 | .137923 | .102696 | .285742 | .054379 |
| 22-30 | .104622 | .089520 | .457689 | .045726 |

RUN NO 90D 91M 6-18-63 1840-195C(EST)

GROSS STATISTICS

| | | |
|-----------------|------------------------|------------------|
| CLEAR STABLE | WIND SPEED 8.75 M/SEC | SIGMA A 5.70 DEG |
| | WIND DIRECTION 243 DEG | SIGMA E 3.0 DEG |
| | SOLAR RAD. 0.02 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.13551E 01 | 0.56336E 00 | 0.43827E-00 | 0.36575E-00 |
| V | 0.72747E 00 | 0.44036E-00 | 0.31497E-00 | 0.23909E-00 |
| W | 0.20176E-00 | 0.19169E-00 | 0.17914E-00 | 0.65746E-01 |
| T | 0.44232E-00 | 0.18417E-01 | 0.12177E-01 | 0.14374E-01 |
| E | 0.11422E 01 | 0.59773E 00 | 0.46620E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.13304 | 0.08578 | 0.07566 | 0.06912 |
| V | 0.09748 | 0.07584 | 0.06414 | 0.05588 |
| W | 0.05133 | 0.05004 | 0.04837 | 0.02930 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.37231E-00 | 0.53733E-01 | 0.35882E-02 | 0.52284E-01 |
| U,W | -0.19280E-00 | -0.15013E-00 | -0.12569E-00 | -0.88059E-01 |
| U,T | -0.19243E-00 | 0.52850E-01 | 0.34556E-01 | 0.42279E-01 |
| V,W | -0.14764E-02 | 0.92207E-02 | 0.10375E-01 | 0.37390E-02 |
| V,T | 0.26991E-01 | 0.17193E-01 | 0.17800E-02 | 0.15862E-01 |
| W,T | -0.18577E-01 | -0.19927E-01 | -0.18193E-01 | -0.11823E-01 |
| WE | -0.87444E-02 | 0.27451E-01 | 0.11687E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.37497 | 0.10788 | 0.00966 | 0.17681 |
| U,W | -0.36873 | -0.45685 | -0.44856 | -0.56786 |
| U,T | -0.24856 | 0.51886 | 0.47301 | 0.58310 |
| V,W | -0.00385 | 0.03174 | 0.04368 | 0.02982 |
| V,T | 0.04758 | 0.19091 | 0.02874 | 0.27058 |
| W,T | -0.06219 | -0.33537 | -0.38952 | -0.38461 |

RUN NO 90D 91M 6-18-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.37158 10E 00 | 0.28021 10E 00 | 0.73035 10E-01 | 0.23756 10E 00 | 0.61918 10E-01 | 0.46692 10E-01 |
| 0 | .009569 | -.448443 | +.72934 | .043699 | .028830 | -.389669 |
| 1 | .015086 | -.378023 | .447273 | .046735 | .024049 | -.332993 |
| 2 | .015045 | -.273195 | .388959 | .044894 | .015311 | -.247027 |
| 3 | .018458 | -.181825 | .319154 | .020690 | .010672 | -.176131 |
| 4 | .017330 | -.109305 | .256847 | -.006336 | .003530 | -.121882 |
| 5 | .019128 | -.055583 | .202767 | -.030156 | -.005222 | -.081408 |
| 6 | .023651 | -.016740 | .153045 | -.037608 | -.006368 | -.047800 |
| 7 | .023431 | .008261 | .109286 | -.035593 | -.000268 | -.017007 |
| 8 | .025273 | .022964 | .067004 | -.028858 | .007226 | .005272 |
| 9 | .018441 | .029818 | .025432 | -.027049 | .013232 | .025653 |
| 10 | .011922 | .036888 | -.010476 | -.031996 | .015695 | .043132 |
| 11 | .008341 | .040694 | -.040355 | -.038931 | .013360 | .055180 |
| 12 | .006790 | .055361 | -.064780 | -.031957 | .007416 | .060798 |
| 13 | -.000749 | .058515 | -.077529 | -.012268 | -.000776 | .055626 |
| 14 | -.010186 | .050824 | -.082525 | -.002740 | -.000422 | .049941 |
| 15 | -.013595 | .048931 | -.084388 | -.002827 | .000274 | .042511 |
| 16 | -.007699 | .055056 | -.089414 | -.002308 | -.002140 | .041522 |
| 17 | -.001694 | .056426 | -.096324 | .005003 | -.004476 | .050098 |
| 18 | -.006572 | .060390 | -.106828 | .014624 | -.005917 | .058378 |
| 19 | -.013778 | .054621 | -.114710 | .014580 | -.009573 | .064128 |
| 20 | -.015834 | .058195 | -.118966 | .014207 | -.010533 | .070070 |
| 21 | -.012577 | .064025 | -.125764 | .014036 | -.004273 | .076379 |
| 22 | -.008073 | .065833 | -.132971 | .020181 | -.000978 | .082050 |
| 23 | -.002903 | .076281 | -.139902 | .024822 | -.000115 | .091715 |
| 24 | .001365 | .085096 | -.147387 | .029137 | .001894 | .106737 |
| 25 | .003647 | .085115 | -.152598 | .021065 | .002704 | .114227 |
| 26 | .004801 | .085157 | -.153104 | .013141 | -.000927 | .107847 |
| 27 | .006409 | .070445 | -.149777 | .007066 | -.005682 | .090302 |
| 28 | -.001249 | .064161 | -.146073 | .003428 | -.010552 | .073516 |
| 29 | -.010387 | .060788 | -.140907 | -.002862 | -.011881 | .069085 |
| 30 | -.018194 | .054407 | -.129401 | -.009951 | -.010831 | .061342 |
| 31 | -.027724 | .046279 | -.118637 | -.006696 | -.008597 | .051256 |
| 32 | -.038424 | .039871 | -.114853 | .008498 | -.003251 | .047780 |
| 33 | -.043573 | .037762 | -.105627 | .019420 | -.002294 | .043532 |
| 34 | -.040594 | .039168 | -.089972 | .018807 | -.003569 | .033579 |
| 35 | -.034024 | .037792 | -.074717 | .015417 | -.008916 | .020700 |
| 36 | -.024040 | .028271 | -.063424 | .010691 | -.015045 | .003145 |
| 37 | -.019134 | .013608 | -.053034 | .010166 | -.012874 | -.011066 |
| 38 | -.017474 | .003125 | -.040864 | .019183 | -.013366 | -.015305 |
| 39 | -.013664 | -.004841 | -.025622 | .019295 | -.019995 | -.009785 |
| 40 | -.011205 | -.011404 | -.009244 | .017983 | -.025067 | -.007248 |
| 41 | -.004186 | -.016309 | .003302 | .014903 | -.028802 | -.014133 |
| 42 | .002591 | -.021104 | .008357 | .024804 | -.026180 | -.017610 |
| 43 | .005134 | -.011378 | .011098 | .024359 | -.016047 | -.015861 |
| 44 | .007189 | .000809 | .015312 | .014687 | -.006237 | -.012151 |
| 45 | .012043 | .012317 | .020851 | .000159 | .001473 | -.01185 |
| 46 | .017168 | .018567 | .028275 | -.015454 | .011602 | -.010947 |
| 47 | .022278 | .019070 | .037306 | -.032745 | .023431 | -.009298 |
| 48 | .029021 | .012682 | .048647 | -.054266 | .028112 | -.011218 |
| 49 | .032885 | .003304 | .056403 | -.053128 | .022220 | -.020070 |
| 50 | .026228 | -.008447 | .058805 | -.048207 | .012493 | -.026083 |
| 51 | .012246 | -.021320 | .057142 | -.029985 | .006435 | -.029490 |
| 52 | .001825 | -.026093 | .056374 | -.014612 | -.001085 | -.029619 |
| 53 | -.009727 | -.032294 | .056643 | -.004744 | -.003792 | -.025905 |
| 54 | -.015586 | -.040700 | .052963 | -.008357 | -.006402 | -.023061 |
| 55 | -.017177 | -.036867 | .048455 | .010322 | -.007347 | -.024610 |
| 56 | -.016341 | -.034056 | .047735 | .008256 | -.005903 | -.023908 |
| 57 | -.014291 | -.030272 | .047437 | .003997 | -.004385 | -.020263 |
| 58 | -.010370 | -.031946 | .044622 | -.007126 | .003728 | -.015930 |
| 59 | -.003547 | -.032503 | .040564 | -.023318 | .012640 | -.015411 |
| 60 | -.002249 | -.029537 | .035763 | -.019253 | .018716 | -.019351 |

RUN NO 90D 91M 6-28-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.37158 10E 00 | 0.28021 10E 00 | 0.73035 10E-01 | 0.23756 10E 00 | 0.61918 10E-01 | 0.46692 10E-01 |
| 1 | -.008171 | -.002772 | .041853 | .001345 | .019925 | -.065058 |
| 2 | -.016556 | -.000211 | .064145 | .017862 | .022204 | -.087693 |
| 3 | -.026604 | .010148 | .074966 | .019808 | .020232 | -.095443 |
| 4 | -.031476 | .010774 | .083498 | .014294 | .018996 | -.088654 |
| 5 | -.034058 | -.003468 | .089590 | .010688 | .021925 | -.079487 |
| 6 | -.038785 | -.022832 | .097668 | -.001485 | .027980 | -.069215 |
| 7 | -.040024 | -.028741 | .100903 | -.016938 | .036356 | -.056320 |
| 8 | -.037371 | -.017192 | .102175 | -.026702 | .042743 | -.056479 |
| 9 | -.034751 | -.000898 | .103207 | -.020398 | .043735 | -.058557 |
| 10 | -.029358 | .005659 | .102971 | -.017742 | .0380 2 | -.057571 |
| 11 | -.025275 | .006946 | .103308 | -.014004 | .034239 | -.054311 |
| 12 | -.024245 | .000140 | .103203 | -.003445 | .027471 | -.046087 |
| 13 | -.015057 | -.009774 | .097597 | .006278 | .017020 | -.039475 |
| 14 | -.009403 | -.021548 | .089591 | .003678 | .014679 | -.031220 |
| 15 | -.011726 | -.021500 | .080691 | -.000633 | .021413 | -.024774 |
| 16 | -.017649 | -.008018 | .072962 | -.011213 | .031766 | -.026344 |
| 17 | -.020628 | -.000112 | .064298 | -.014299 | .037782 | -.032793 |
| 18 | -.017130 | -.002364 | .054734 | .000178 | .033173 | -.034927 |
| 19 | -.019663 | -.011699 | .046513 | .010091 | .028761 | -.031222 |
| 20 | -.024364 | -.014516 | .041235 | .010545 | .030250 | -.031914 |
| 21 | -.027225 | -.014737 | .036213 | .002997 | .035949 | -.031078 |
| 22 | -.029644 | -.016544 | .034780 | -.006487 | .037592 | -.023840 |
| 23 | -.030928 | -.022852 | .031453 | -.007630 | .031896 | -.011576 |
| 24 | -.023217 | -.026353 | .023936 | -.008719 | .023311 | .006520 |
| 25 | -.009420 | -.023540 | .012488 | -.000194 | .016304 | .024102 |
| 26 | .006012 | -.016679 | .000221 | .019192 | .009602 | .032596 |
| 27 | .011384 | -.004562 | -.011516 | .037096 | .003947 | .035172 |
| 28 | .009882 | .003681 | -.021040 | .037768 | .003349 | .032943 |
| 29 | .009034 | .009653 | -.028271 | .022543 | .010099 | .031542 |
| 30 | .016409 | .023345 | -.034236 | .012525 | .008045 | .030972 |
| 31 | .023239 | .031889 | -.037850 | .008129 | .000394 | .030667 |
| 32 | .040594 | .033351 | -.041607 | .019483 | -.009124 | .023464 |
| 33 | .055112 | .027461 | -.048810 | .031109 | -.014144 | .018590 |
| 34 | .060194 | .031127 | -.058228 | .036839 | -.019958 | .022335 |
| 35 | .059487 | .033955 | -.066376 | .034713 | -.026070 | .030489 |
| 36 | .060134 | .031164 | -.069834 | .029931 | -.032719 | .034002 |
| 37 | .056389 | .022526 | -.073916 | .025592 | -.036971 | .029216 |
| 38 | .047795 | .014803 | -.073936 | .025114 | -.037895 | .026898 |
| 39 | .033583 | .009485 | -.067066 | .022189 | -.038868 | .021623 |
| 40 | .020214 | .010582 | -.056831 | .014072 | -.037883 | .012479 |
| 41 | .011175 | .008651 | -.047727 | -.001926 | -.033749 | .007200 |
| 42 | .005130 | -.001229 | -.037201 | -.023213 | -.029291 | .000726 |
| 43 | -.007688 | -.017064 | -.023905 | -.038296 | -.026967 | -.003232 |
| 44 | -.023730 | -.020308 | -.011780 | -.047513 | -.025373 | .001501 |
| 45 | -.033688 | -.025071 | -.004968 | -.051150 | -.022448 | .009616 |
| 46 | -.032377 | -.027112 | -.004999 | -.049818 | -.020834 | .010214 |
| 47 | -.025998 | -.022824 | -.008432 | -.041342 | -.019960 | .011758 |
| 48 | -.018989 | -.010317 | -.012665 | -.023285 | -.016463 | .012367 |
| 49 | -.014341 | -.004783 | -.013296 | -.005214 | -.012687 | .010808 |
| 50 | -.012940 | -.007127 | -.008826 | -.004538 | -.012912 | .008255 |
| 51 | -.014531 | .003788 | -.002618 | .006166 | -.010655 | .004950 |
| 52 | -.009836 | .007428 | .002116 | .002552 | -.006570 | -.006709 |
| 53 | -.003731 | .010315 | .004499 | .001943 | -.006459 | -.016273 |
| 54 | .003410 | .011370 | .010388 | .001666 | -.012934 | -.019718 |
| 55 | .007760 | .006073 | .018352 | -.002106 | -.014686 | -.020957 |
| 56 | .002731 | -.004540 | .027800 | -.003280 | -.011041 | -.020515 |
| 57 | -.014575 | -.004758 | .034669 | .006249 | -.007534 | -.018728 |
| 58 | -.025645 | .001471 | .039212 | .012127 | -.004224 | -.016789 |
| 59 | -.033995 | .000220 | .046957 | .010554 | .000879 | -.021030 |
| 60 | -.034974 | -.002674 | .050575 | .005810 | .008937 | -.026226 |

RUN NO 90D 91M 6-18-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.43830 10E 00 | 0.31502 10E 00 | 0.17914 10E 00 | 0.12170 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .844355 | .746183 | .648470 | .898200 |
| 2 | .648125 | .452887 | .327868 | .747695 |
| 3 | .493318 | .256488 | .161585 | .621002 |
| 4 | .373077 | .133892 | .068450 | .513595 |
| 5 | .270878 | .047940 | -.002855 | .422291 |
| 6 | .173357 | -.011164 | -.070440 | .342032 |
| 7 | .090325 | -.056466 | -.113878 | .265581 |
| 8 | .024077 | -.103431 | -.122821 | .190053 |
| 9 | -.027607 | -.132748 | -.117586 | .117615 |
| 10 | -.069084 | -.138073 | -.103053 | .047797 |
| 11 | -.106710 | -.122802 | -.098806 | -.015222 |
| 12 | -.139155 | -.099786 | -.108743 | -.066008 |
| 13 | -.157585 | -.082837 | -.098405 | -.104435 |
| 14 | -.162354 | -.078198 | -.062915 | -.133719 |
| 15 | -.165280 | -.096441 | -.041349 | -.157968 |
| 16 | -.178980 | -.106951 | -.035470 | -.191304 |
| 17 | -.198681 | -.109484 | -.035536 | -.231121 |
| 18 | -.211865 | -.115785 | -.038323 | -.268363 |
| 19 | -.215008 | -.131952 | -.030071 | -.297914 |
| 20 | -.220517 | -.144736 | -.031661 | -.320021 |
| 21 | -.228539 | -.146994 | -.047344 | -.341996 |
| 22 | -.231686 | -.152028 | -.054237 | -.363789 |
| 23 | -.232452 | -.149014 | -.097759 | -.383619 |
| 24 | -.235984 | -.140692 | -.125417 | -.401182 |
| 25 | -.229592 | -.116868 | -.125122 | -.408005 |
| 26 | -.209460 | -.088112 | -.107966 | -.400580 |
| 27 | -.195558 | -.067690 | -.071855 | -.386960 |
| 28 | -.181757 | -.071858 | -.052579 | -.363912 |
| 29 | -.168239 | -.065664 | -.048606 | -.333682 |
| 30 | -.142464 | -.039971 | -.040755 | -.297473 |
| 31 | -.107612 | -.011391 | -.019123 | -.259216 |
| 32 | -.085576 | .001727 | -.008968 | -.224600 |
| 33 | -.066862 | .003572 | -.012902 | -.195997 |
| 34 | -.048413 | .014692 | -.024051 | -.167665 |
| 35 | -.029621 | .035162 | -.011630 | -.136688 |
| 36 | -.015575 | .046320 | .015212 | -.102304 |
| 37 | -.001573 | .049575 | .034038 | -.068832 |
| 38 | .017730 | .043028 | .035728 | -.036745 |
| 39 | .032403 | .042923 | .027652 | -.009860 |
| 40 | .045364 | .043657 | .009226 | .013015 |
| 41 | .055976 | .041169 | .009791 | .038841 |
| 42 | .063388 | .037578 | .014146 | .062490 |
| 43 | .066158 | .042461 | .002573 | .079052 |
| 44 | .051587 | .052994 | -.029743 | .092748 |
| 45 | .033724 | .057259 | -.025226 | .109393 |
| 46 | .019646 | .057514 | -.025707 | .123499 |
| 47 | .015839 | .051475 | -.023843 | .133793 |
| 48 | .021849 | .041181 | -.007108 | .140654 |
| 49 | .026930 | .022007 | .008565 | .147150 |
| 50 | .028673 | -.008281 | .011720 | .152460 |
| 51 | .024525 | -.036328 | .018577 | .160447 |
| 52 | .022387 | -.051894 | .021463 | .164625 |
| 53 | .022984 | -.063706 | .012266 | .161921 |
| 54 | .019951 | -.060028 | .012753 | .151699 |
| 55 | .016912 | -.052882 | .000205 | .137951 |
| 56 | .014238 | -.035006 | -.016745 | .124121 |
| 57 | .012979 | -.022060 | -.026122 | .111388 |
| 58 | .012083 | .000799 | -.014094 | .100445 |
| 59 | .014006 | .004863 | -.008103 | .089812 |
| 60 | .014015 | .003171 | -.003062 | .079449 |

RUN NO 90D 91M 6-18-63 1840-1956(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-03 | 10E-02 |
| 0 | .020890 | -.007692 | .042064 | .007804 | .018587 | -.007372 |
| 1 | .323618 | -.112315 | .583709 | -.086285 | .334094 | -.172235 |
| 2 | .345859 | -.151385 | .751728 | -.119489 | .304585 | -.260451 |
| 3 | .144618 | -.157785 | .677424 | .010861 | .101213 | -.272247 |
| 4 | .025811 | -.115340 | .389466 | .144079 | .067036 | -.171698 |
| 5 | .121302 | -.095481 | .288884 | .226492 | .084660 | -.128778 |
| 6 | -.055264 | -.097183 | .248875 | .313492 | -.059095 | -.143691 |
| 7-8 | -.153068 | -.077744 | .144299 | .158672 | .045472 | -.115645 |
| 9-11 | -.024193 | -.047886 | .050325 | .109180 | .185503 | -.046608 |
| 12-15 | .022460 | -.030050 | .038879 | .045009 | .108397 | -.034556 |
| 16-20 | -.002315 | -.013948 | .018484 | -.007646 | -.035230 | -.023254 |
| 21-27 | -.015578 | -.009286 | .006603 | -.030920 | .008259 | -.013527 |
| 28-36 | .000647 | -.004324 | .001698 | -.012719 | .024171 | -.005733 |
| 37-47 | .000385 | -.002543 | -.000290 | -.004430 | .001824 | -.004081 |
| 48-60 | -.011502 | -.001735 | .000733 | .002497 | -.001267 | -.001658 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | -.204845 | -.073619 | .205833 | .110795 | .089360 | -.056854 |
| 2 | -.528484 | -.161217 | .314061 | -.038332 | .112009 | -.105461 |
| 3 | -.535350 | -.128859 | .291312 | -.163257 | .063998 | -.122469 |
| 4 | -.037913 | .095556 | .118588 | -.004690 | .004986 | -.072463 |
| 5 | -.066305 | .070159 | .066002 | .070407 | .018651 | -.039304 |
| 6 | -.359219 | -.125940 | .066064 | -.031363 | .028221 | -.046391 |
| 7-8 | -.104341 | -.001375 | .021487 | .060963 | .013794 | -.053976 |
| 9-11 | .029229 | .006539 | .019901 | .097818 | -.009155 | -.021708 |
| 12-15 | .002331 | .090936 | .013768 | .051274 | .005040 | -.028129 |
| 16-20 | .003110 | -.032886 | .008533 | -.026664 | .009298 | -.009283 |
| 21-27 | -.002009 | -.040452 | .006597 | -.009670 | .004621 | -.005538 |
| 28-36 | .010950 | .008185 | .002135 | -.011489 | .002653 | -.003567 |
| 37-47 | -.001561 | .002460 | .001624 | -.012935 | .001089 | -.002420 |
| 48-60 | .001000 | .001920 | -.000505 | -.000029 | .000474 | -.001017 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .036502 | .014289 | .006299 | .011359 |
| 1 | .460531 | .149053 | .072127 | .196171 |
| 2 | .655122 | .246312 | .101733 | .278508 |
| 3 | .722213 | .335188 | .125787 | .252545 |
| 4 | .483344 | .268385 | .111095 | .116493 |
| 5 | .321997 | .202438 | .104265 | .063913 |
| 6 | .291234 | .204541 | .123537 | .061337 |
| 7-8 | .215396 | .203619 | .114779 | .046031 |
| 9-11 | .113390 | .127903 | .067026 | .020032 |
| 12-15 | .069728 | .074096 | .050831 | .015823 |
| 16-20 | .044165 | .063923 | .034291 | .009928 |
| 21-27 | .033445 | .035801 | .031857 | .005475 |
| 28-36 | .017221 | .023480 | .019411 | .003078 |
| 37-47 | .011251 | .013366 | .013167 | .001867 |
| 48-60 | .007580 | .009635 | .009275 | .000952 |

RUN NO 900 91M 6-18-63 1840-1956(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.29571 10E 00 | 0.15502 10E 00 | 0.72507 10E-01 | 0.12533 10E 00 | 0.58619 10E-01 | 0.30731 10E-01 |
| 0 | .176811 | -.568030 | .583102 | .029833 | .270595 | -.384733 |
| 1 | .183760 | -.123152 | .251719 | -.053442 | .265067 | -.027529 |
| 2 | .146786 | -.056187 | .107657 | .009650 | .213904 | .037240 |
| 3 | .126067 | .058059 | -.016016 | -.026637 | .201881 | .086879 |
| 4 | .088753 | .035106 | -.024173 | -.005273 | .155501 | .040456 |
| 5 | .103918 | .059898 | .010603 | -.019997 | .119420 | -.000096 |
| 6 | .041366 | -.025577 | .020583 | -.036701 | .051622 | -.050798 |
| 7 | .019106 | .002173 | -.003444 | .000488 | -.008918 | -.033498 |
| 8 | -.058373 | .021243 | -.075276 | .044895 | -.106705 | .006890 |
| 9 | -.117543 | .036530 | -.077607 | .047754 | -.181032 | .043101 |
| 10 | -.131259 | .013359 | -.083322 | .015412 | -.194530 | .038961 |
| 11 | -.087832 | .050360 | -.115519 | -.04970 | -.172717 | -.002454 |
| 12 | -.157524 | .074853 | -.138917 | .051124 | -.198343 | .030615 |
| 13 | -.109636 | .115004 | -.198381 | .016016 | -.217011 | .062122 |
| 14 | -.052553 | .066330 | -.211486 | -.060225 | -.209689 | .043442 |
| 15 | -.057168 | -.38951 | -.143085 | .012514 | -.189028 | .026143 |
| 16 | -.100846 | .050315 | -.067866 | .019578 | -.143403 | .003044 |
| 17 | -.07213 | .007278 | -.093684 | -.009775 | -.109039 | .011271 |
| 18 | -.066663 | .086895 | -.121652 | -.002114 | -.092451 | .072714 |
| 19 | -.070559 | -.060655 | -.017235 | .054522 | -.043958 | .000410 |
| 20 | -.051394 | -.026841 | .055044 | .057479 | .023065 | .007753 |
| 21 | -.032831 | -.056261 | .133296 | .088715 | .030039 | -.043387 |
| 22 | .016282 | -.027456 | .140770 | .039511 | .085528 | -.066233 |
| 23 | .057043 | .032540 | .087691 | -.008722 | .147492 | -.023262 |
| 24 | .046222 | .060982 | .050450 | -.049303 | .173352 | .021780 |
| 25 | .076759 | .026616 | .087319 | -.044074 | .187196 | .028565 |
| 26 | .075180 | .038986 | .153599 | .017235 | .144834 | -.044585 |
| 27 | .093328 | .031502 | .180503 | -.055861 | .167520 | -.074867 |
| 28 | .072496 | -.045815 | .209102 | -.021187 | .149728 | -.096917 |
| 29 | .127552 | .008519 | .103033 | -.057633 | .166402 | -.023794 |
| 30 | .108920 | .013368 | .051647 | -.059412 | .101915 | -.018940 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 |
| 0 | .013338 | -.057595 | -.011116 | .015259 | .013704 | .037445 |
| 1 | .174115 | -.442890 | .301432 | -.081385 | .433135 | -.221866 |
| 2 | .209927 | -.538025 | .578055 | -.112752 | .667945 | -.502856 |
| 3 | .157271 | -.615158 | .495726 | -.067871 | .531872 | -.406519 |
| 4 | .053562 | -.410760 | .150312 | -.083778 | .113532 | -.121656 |
| 5 | .000127 | -.316365 | .170594 | .006554 | -.005194 | -.222458 |
| 6 | -.033665 | -.491597 | .272644 | .135377 | -.036264 | -.420447 |
| 7 | -.014419 | -.595616 | .258878 | .048037 | -.038674 | -.574470 |
| 8 | .018717 | -.589058 | .254431 | -.000525 | -.013047 | -.832379 |
| 9-11 | .016528 | -.411355 | .235505 | -.043158 | .039497 | -.907253 |
| 12-14 | -.000663 | -.244757 | .114554 | .003035 | -.010143 | -.418287 |
| 15-21 | -.004316 | -.282284 | .084932 | .017669 | .009855 | -.460263 |
| 22-30 | -.001650 | -.401773 | .121099 | .111515 | -.008821 | -.625574 |

RUN NO 900 91M 6-18-63 1840-1956(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.29571 10E 00 | 0.15502 10E 00 | 0.72507 10E-01 | 0.12533 10E 00 | 0.58619 10E-01 | 0.30731 10E-01 |
| 1 | -.054047 | -.024105 | .092396 | .003822 | .087008 | -.072788 |
| 2 | -.040720 | -.026693 | .084473 | .070204 | .110472 | -.060558 |
| 3 | -.032251 | .013605 | .026764 | .065061 | .144765 | -.001515 |
| 4 | -.018818 | .026886 | -.019059 | .032724 | .136988 | -.002376 |
| 5 | -.047300 | -.046605 | -.008887 | .032762 | .152249 | .017017 |
| 6 | -.055338 | -.001930 | .013623 | .008403 | .191665 | -.020365 |
| 7 | -.025034 | .015766 | -.009855 | .009676 | .210820 | .006779 |
| 8 | .026390 | -.011946 | -.017858 | .029132 | .140102 | -.002414 |
| 9 | .041756 | -.031691 | -.023101 | .032720 | .072982 | .041157 |
| 10 | .066576 | .060835 | .029225 | .088404 | .004163 | -.023361 |
| 11 | .027894 | .022360 | .045866 | .056621 | .045666 | -.016980 |
| 12 | .042368 | -.030707 | .044275 | .024379 | .051247 | -.014325 |
| 13 | .070050 | -.028908 | .000122 | .027825 | .004098 | .014164 |
| 14 | .064447 | -.019541 | -.010368 | .028600 | -.069410 | .024107 |
| 15 | .096786 | .014044 | -.008355 | .017173 | -.103182 | .022188 |
| 16 | .146181 | .035319 | .031915 | .051375 | -.102499 | -.041937 |
| 17 | .127518 | .029953 | .038281 | .065530 | -.101902 | -.045219 |
| 18 | .137864 | .036954 | .032341 | .059156 | -.128114 | -.055840 |
| 19 | .139615 | -.002335 | .035854 | .020491 | -.152354 | -.041642 |
| 20 | .120086 | -.011347 | .039310 | .030783 | -.134304 | .006486 |
| 21 | .082609 | .005306 | -.003856 | .000556 | -.112277 | .029217 |
| 22 | .022100 | .005222 | -.002676 | -.014087 | -.068092 | .019951 |
| 23 | -.002420 | .025949 | .013746 | -.007679 | -.023286 | -.027729 |
| 24 | -.052374 | -.002721 | -.034378 | -.056981 | .048225 | .030638 |
| 25 | -.078274 | .014973 | -.064521 | -.041960 | .085237 | .030270 |
| 26 | -.094622 | -.021508 | -.049452 | -.020592 | .089149 | .050353 |
| 27 | -.078172 | -.017987 | -.045812 | -.053380 | .103946 | .048386 |
| 28 | -.152849 | -.008281 | -.044884 | -.042557 | .158715 | .050988 |
| 29 | -.150261 | -.013193 | -.043745 | -.049537 | .138180 | .055298 |
| 30 | -.110486 | .024565 | -.023115 | -.049970 | .121776 | -.029184 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-01 | 10E-03 | 10E-02 | 10E-02 | 10E-02 | 10E-03 |
| 1 | .126238 | .324699 | .093533 | .457004 | .202958 | -.178350 |
| 2 | -.027410 | -.369556 | .026177 | .218083 | .414473 | -.033642 |
| 3 | -.091834 | -.417744 | .000233 | .052375 | .412696 | -.028520 |
| 4 | -.025883 | -.039532 | .047930 | .080662 | .134596 | -.252005 |
| 5 | -.024026 | -.363716 | .057555 | .078094 | .058575 | -.193121 |
| 6 | -.028738 | -.626417 | .089054 | .081590 | .031384 | -.124009 |
| 7 | .006775 | .153897 | .128768 | .168923 | -.022462 | -.329362 |
| 8 | .014672 | .859756 | .090239 | .149664 | -.018706 | .346734 |
| 9-11 | -.013222 | -.880376 | .064182 | -.018772 | .060496 | -.205779 |
| 12-14 | -.021382 | -.312522 | .085577 | -.002785 | .000727 | -.272982 |
| 15-21 | -.001307 | -.024508 | .005326 | -.054834 | .006936 | -.076358 |
| 22-30 | -.008094 | -.333917 | .003170 | -.021914 | .016726 | .090778 |

RUN NO 900 91M 6-18-63 1840-1956(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.36577 10E 00 | 0.23907 10E 00 | 0.65705 10E-01 | 0.14373 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .362695 | .521696 | .055130 | .492856 |
| 2 | .106159 | .440196 | .048060 | .140881 |
| 3 | .007799 | .336974 | -.070539 | -.021111 |
| 4 | .001266 | .344350 | -.088138 | .040551 |
| 5 | -.055543 | .164249 | -.142629 | .100073 |
| 6 | -.000573 | .068082 | -.022670 | .052013 |
| 7 | -.016454 | -.019712 | -.058434 | -.038207 |
| 8 | -.044198 | -.080797 | .030990 | -.171505 |
| 9 | -.017951 | -.235534 | -.052708 | -.211615 |
| 10 | -.072315 | -.305111 | -.052468 | -.204807 |
| 11 | -.156314 | -.351041 | .000970 | -.186766 |
| 12 | -.130511 | -.363881 | -.098844 | -.210196 |
| 13 | -.251125 | -.393079 | -.110054 | -.293371 |
| 14 | -.172165 | -.395875 | -.071414 | -.301438 |
| 15 | -.051100 | -.365384 | -.023641 | -.201884 |
| 16 | -.007501 | -.258899 | -.023170 | -.066284 |
| 17 | -.122397 | -.238019 | -.065774 | -.038355 |
| 18 | -.111719 | -.171334 | -.051450 | -.096818 |
| 19 | .012943 | -.124427 | .128748 | -.059417 |
| 20 | .038727 | .006608 | .029155 | .042004 |
| 21 | .077139 | .007955 | .087722 | .219722 |
| 22 | .063179 | .137209 | .057209 | .273511 |
| 23 | -.008229 | .213258 | -.000418 | .172639 |
| 24 | -.047546 | .223723 | -.068695 | .069389 |
| 25 | -.011265 | .188303 | -.022132 | .081874 |
| 26 | .049971 | .202055 | -.027180 | .218755 |
| 27 | .001438 | .219200 | -.020823 | .270944 |
| 28 | .148675 | .240202 | -.067585 | .195841 |
| 29 | .089562 | .118553 | -.064390 | .042725 |
| 30 | .047408 | .078064 | -.045669 | .002130 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 |
| 0 | .035317 | .040049 | .018988 | .006497 |
| 1 | .296822 | .442913 | .141498 | .114955 |
| 2 | .347329 | .547390 | .237122 | .193777 |
| 3 | .321690 | .417039 | .350380 | .187827 |
| 4 | .180511 | .115646 | .273900 | .075542 |
| 5 | .155366 | .044959 | .255374 | .050024 |
| 6 | .218045 | .047103 | .376451 | .063260 |
| 7 | .240580 | .049878 | .399771 | .066322 |
| 8 | .224609 | .053259 | .338081 | .076329 |
| 9-11 | .144604 | .046573 | .244837 | .093864 |
| 12-14 | .126463 | .049340 | .178710 | .052541 |
| 15-21 | .120638 | .052602 | .268247 | .028011 |
| 22-30 | .100865 | .065348 | .396130 | .028040 |

RUN NO 900 46M 6-18-63 1840-1956(EST)
 RUN NO 900 91M 6-18-63 1840-1956(EST)

61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .119492 | .137645 | .058966 | .340101 |
| 1 | .350191 | .302129 | .229146 | .436897 |
| 2 | .340319 | .257462 | .222719 | .476912 |
| 3 | .245882 | .196743 | .218358 | .455221 |
| 4 | .096057 | .242569 | .247089 | .347652 |
| 5 | .100199 | .321475 | .198030 | .347173 |
| 6 | .200862 | .213660 | .163996 | .250595 |
| 7-8 | .106039 | .073130 | .156086 | .065023 |
| 9-11 | .125596 | .059445 | .183703 | .041887 |
| 12-15 | .052622 | .158931 | .136975 | .066296 |
| 16-20 | .117365 | .113354 | .117103 | .080586 |
| 21-27 | .129602 | .134514 | .070520 | .072443 |
| 28-38 | .123053 | .102487 | .141424 | .082432 |
| 37-47 | .107710 | .090333 | .079717 | .079843 |
| 48-60 | .076285 | .109717 | .089989 | .091865 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .856614 | .967468 | .733044 | .578185 |
| 1 | .613472 | .939654 | .502915 | .674305 |
| 2 | .509824 | .904982 | .276889 | .769211 |
| 3 | .468185 | .758964 | .118205 | .779665 |
| 4 | .409083 | .310640 | .134187 | .680688 |
| 5 | .193817 | .116573 | .245928 | .314522 |
| 6 | .161945 | .135493 | .298382 | .229645 |
| 7 | .093250 | .255290 | .181688 | .209039 |
| 8 | .488190 | .374304 | .253464 | .432504 |
| 9-11 | .485280 | .256557 | .272766 | .548214 |
| 12-14 | .468317 | .210216 | .176243 | .495603 |
| 15-21 | .282242 | .246504 | .241963 | .360820 |
| 22-30 | .320488 | .369501 | .356485 | .302230 |

RUN NO 91A 15M 6-18-63 2150-2300(EST)

GROSS STATISTICS

| | | |
|-----------------|------------------------|------------------|
| CLEAR STABLE | WIND SPEED 3.58 M/SEC | SIGMA A 7.40 DEG |
| | WIND DIRECTION 235 DEG | SIGMA E 4.7 DEG |
| | SOLAR RAD. 0 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.33563E-00 | 0.28544E-00 | 0.24434E-00 | 0.15147E-00 |
| V | 0.19807E-00 | 0.16804E-00 | 0.15823E-00 | 0.59804E-01 |
| W | 0.79509E-01 | 0.74046E-01 | 0.73718E-01 | 0.19132E-01 |
| T | 0.20319E-01 | 0.36271E-02 | 0.28923E-02 | 0.19993E-02 |
| E | 0.30660E-00 | 0.26377E-00 | 0.23815E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.16183 | 0.14924 | 0.13808 | 0.10871 |
| V | 0.12431 | 0.11451 | 0.11111 | 0.06831 |
| W | 0.07876 | 0.07601 | 0.07584 | 0.03864 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.29995E-01 | 0.20341E-01 | 0.14923E-01 | 0.83634E-02 |
| U,W | -0.55770E-01 | -0.52205E-01 | -0.47889E-01 | -0.24988E-01 |
| U,T | 0.17022E-01 | 0.13766E-01 | 0.99378E-02 | 0.95614E-02 |
| V,W | 0.30114E-02 | -0.11286E-02 | -0.19446E-03 | 0.18613E-02 |
| V,T | -0.28236E-02 | 0.59148E-02 | 0.49408E-02 | 0.28114E-02 |
| W,T | -0.72918E-02 | -0.58418E-02 | -0.54158E-02 | -0.22365E-02 |
| WE | 0.18882E-02 | 0.31134E-02 | 0.39129E-02 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.11624 | 0.09288 | 0.07589 | 0.08787 |
| U,W | -0.34140 | -0.35909 | -0.35682 | -0.46416 |
| U,T | 0.20612 | 0.42782 | 0.37382 | 0.54943 |
| V,W | 0.02400 | -0.01012 | -0.00180 | 0.05502 |
| V,T | -0.04451 | 0.23958 | 0.23095 | 0.25711 |
| W,T | -0.18141 | -0.35646 | -0.37090 | -0.36162 |

RUN NO 91A 15M 6-18-63 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.19668 10E 00 | .13423 10E 00 | 0.26590 10E-01 | 0.10801 10E 00 | 0.21395 10E-01 | 0.14602 10E-01 |
| 0 | .075856 | -.356788 | .373518 | -.001755 | .230834 | -.370905 |
| 1 | .068552 | -.303249 | .356267 | .011750 | .190530 | -.284431 |
| 2 | .054763 | -.216808 | .307809 | .023288 | .129658 | -.166723 |
| 3 | .030954 | -.145134 | .241971 | .024571 | .081338 | -.088349 |
| 4 | -.000700 | -.085453 | .173618 | .030003 | .044796 | -.050814 |
| 5 | -.018904 | -.044524 | .116197 | .029493 | .012454 | -.014269 |
| 6 | -.025742 | -.011114 | .071941 | .031070 | -.014097 | .023114 |
| 7 | -.024762 | .018481 | .036362 | .031396 | -.028686 | .038870 |
| 8 | -.021026 | .032057 | .007330 | .025943 | -.039825 | .039978 |
| 9 | -.015664 | .032027 | -.014573 | .017125 | -.049430 | .049535 |
| 10 | -.009797 | .031169 | -.030223 | .007105 | -.060013 | .055936 |
| 11 | -.007160 | .035793 | -.043445 | .002035 | -.061058 | .051830 |
| 12 | -.005357 | .033490 | -.058580 | -.010546 | -.050518 | .045723 |
| 13 | -.000225 | .030238 | -.069839 | -.027749 | -.037191 | .037232 |
| 14 | .005482 | .039115 | -.076879 | -.044196 | -.027957 | .035331 |
| 15 | .019913 | .045069 | -.077762 | -.047219 | -.018161 | .033591 |
| 16 | .030652 | .044938 | -.077820 | -.040617 | -.015403 | .029966 |
| 17 | .025484 | .055290 | -.080138 | -.033113 | -.014110 | .028870 |
| 18 | .010889 | .068572 | -.088402 | -.025680 | -.013628 | .029198 |
| 19 | .010687 | .074716 | -.100134 | -.025566 | -.020816 | .027408 |
| 20 | .001076 | .076414 | -.103015 | -.030746 | -.039333 | .017831 |
| 21 | -.001118 | .075053 | -.099908 | -.030052 | -.050653 | .011083 |
| 22 | .007249 | .067313 | -.097772 | -.028342 | -.047715 | .020915 |
| 23 | .009916 | .063647 | -.092399 | -.025768 | -.037832 | .031049 |
| 24 | .007972 | .069443 | -.087682 | -.022576 | -.035887 | .036941 |
| 25 | -.000820 | .070847 | -.085164 | -.025984 | -.028387 | .032583 |
| 26 | -.019346 | .054661 | -.079754 | -.018725 | -.026479 | .030785 |
| 27 | -.026060 | .032720 | -.068795 | .001055 | -.028565 | .028410 |
| 28 | -.030840 | .028684 | -.057255 | .003799 | -.026058 | .021694 |
| 29 | -.026737 | .023064 | -.050217 | .000713 | -.020515 | .021285 |
| 30 | -.022287 | .010984 | -.044665 | -.001720 | -.011436 | .020228 |
| 31 | -.025184 | -.004425 | -.042099 | .002948 | -.007811 | .012826 |
| 32 | -.021108 | -.016418 | -.038689 | .018737 | -.011241 | .011786 |
| 33 | -.009094 | -.012979 | -.029765 | .028974 | -.005250 | .015506 |
| 34 | -.001987 | -.017158 | -.019695 | .033214 | -.007258 | .012243 |
| 35 | -.004781 | -.013399 | -.015885 | .032508 | .017737 | .011024 |
| 36 | -.008102 | -.007906 | -.010807 | .035013 | .021194 | .005341 |
| 37 | -.011918 | .000781 | -.008856 | .032633 | .017361 | -.005130 |
| 38 | -.003742 | -.003695 | -.004385 | .028116 | .008938 | -.018112 |
| 39 | .003341 | -.002399 | -.001971 | .016695 | .005092 | -.016784 |
| 40 | .003703 | .000560 | -.003229 | .020540 | .011891 | -.002151 |
| 41 | .002874 | .005345 | -.006765 | .020511 | .023520 | .007540 |
| 42 | .004313 | .012695 | -.008575 | .019572 | .029033 | .010218 |
| 43 | .014388 | .015111 | -.010403 | .007813 | .030243 | .007867 |
| 44 | .016192 | .007721 | -.012583 | .010584 | .021519 | .001211 |
| 45 | .003155 | .005379 | -.016154 | .014740 | .010614 | .000100 |
| 46 | .001297 | .000436 | -.015735 | .004950 | .011442 | -.000573 |
| 47 | .010407 | -.003176 | -.002825 | -.011530 | .016796 | -.009929 |
| 48 | .004609 | -.006527 | .006523 | -.014022 | .015228 | -.015345 |
| 49 | -.005789 | -.010776 | .005684 | -.002221 | .003997 | -.008276 |
| 50 | -.013048 | -.002247 | .004794 | .001714 | .001061 | .008934 |
| 51 | -.017241 | .012579 | .003601 | .001746 | .003026 | .026464 |
| 52 | -.015237 | .013495 | .006998 | -.008734 | .004887 | .027585 |
| 53 | -.012520 | .003863 | .018207 | -.017286 | .009427 | .019391 |
| 54 | -.014085 | .001544 | .025530 | -.014003 | .013819 | .009317 |
| 55 | -.015238 | .001421 | .027676 | -.008788 | .024940 | -.005116 |
| 56 | -.024287 | .002835 | .029585 | -.004319 | .028917 | -.009530 |
| 57 | -.030876 | .002364 | .025414 | .007968 | .022557 | -.003087 |
| 58 | -.035017 | .009323 | .019899 | .014665 | .014150 | .003757 |
| 59 | -.027747 | .015205 | .015821 | .019502 | .013968 | .008456 |
| 60 | -.028997 | .017970 | .012793 | .022044 | .011435 | .015387 |

RUN NC 91A 15M 6-18-63 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|----------|
| | 0.19668 10E 00 | 0.13423 10E 00 | 0.26590 10E-01 | 0.21395 10E-01 | 0.14602 10E-01 | |
| 1 | .010854 | -.017603 | .063809 | .029295 | .034246 | -.073331 |
| 2 | .023103 | -.025010 | .107900 | .026362 | .036979 | -.082326 |
| 3 | .029770 | -.023728 | .129287 | .030088 | .018830 | -.074764 |
| 4 | .034667 | -.022621 | .134016 | .025868 | .001999 | -.067853 |
| 5 | .038204 | -.022067 | .124247 | .022537 | -.009909 | -.059735 |
| 6 | .031586 | -.030933 | .111180 | .009848 | -.013932 | -.049369 |
| 7 | .029122 | -.030742 | .101215 | -.006125 | -.010522 | -.041384 |
| 8 | .014992 | -.027991 | .093672 | -.002825 | -.003652 | -.039630 |
| 9 | .003506 | -.028763 | .086746 | .010278 | -.003084 | -.034881 |
| 10 | -.009109 | -.022896 | .079917 | .007213 | -.003242 | -.021265 |
| 11 | -.014589 | -.017811 | .075785 | .005556 | -.005753 | -.011018 |
| 12 | -.015640 | -.012038 | .055595 | .014040 | -.004244 | -.006615 |
| 13 | -.012846 | -.004836 | .053076 | .016316 | -.000602 | -.000915 |
| 14 | -.010966 | -.007077 | .041013 | .019979 | -.000677 | .000446 |
| 15 | -.004326 | .008672 | .035352 | .016291 | .000874 | .001337 |
| 16 | .010903 | .003468 | .036387 | .005252 | .002863 | .001919 |
| 17 | .018040 | -.003192 | .036255 | .007549 | .000704 | -.001201 |
| 18 | .015051 | -.003512 | .035736 | .012408 | -.000808 | -.005125 |
| 19 | .003205 | -.004310 | .037744 | .011566 | .005635 | -.008412 |
| 20 | -.004571 | .005250 | .032803 | .010396 | .015570 | -.017595 |
| 21 | -.006824 | .008743 | .024909 | .005810 | .023878 | -.036350 |
| 22 | -.004375 | .005240 | .026145 | .007386 | .022396 | -.047513 |
| 23 | -.000579 | .001135 | .026769 | .014281 | .019343 | -.045868 |
| 24 | -.005895 | -.001792 | .025417 | .010709 | .019314 | -.034135 |
| 25 | -.020882 | .005576 | .021906 | -.012272 | .025661 | -.020094 |
| 26 | -.023089 | .000988 | .011063 | -.012115 | .025427 | -.008536 |
| 27 | -.021524 | -.007405 | -.000657 | -.013902 | .015571 | .002550 |
| 28 | -.022610 | .000504 | -.012612 | -.013053 | -.001599 | .005585 |
| 29 | -.019378 | .000089 | -.017510 | -.014102 | -.010666 | .013912 |
| 30 | -.019394 | -.003101 | -.016373 | -.015043 | -.007593 | .028755 |
| 31 | -.017556 | -.002715 | -.011788 | -.019189 | .000254 | .032770 |
| 32 | -.003566 | -.013291 | .002176 | -.030484 | .006091 | .031636 |
| 33 | .003315 | -.016168 | .014200 | -.038079 | .006847 | .031301 |
| 34 | .004543 | -.011368 | .021110 | -.049449 | .010269 | .029155 |
| 35 | .007345 | -.015116 | .028745 | -.053322 | .013517 | .027174 |
| 36 | .004080 | -.007546 | .024478 | -.034005 | .014004 | .020451 |
| 37 | .000592 | -.004727 | .020780 | -.020672 | .015626 | .018526 |
| 38 | .002110 | .000781 | .012265 | -.016255 | .010520 | .019480 |
| 39 | .002163 | -.001039 | -.000579 | -.004122 | .001871 | .009256 |
| 40 | .002062 | -.004548 | -.011226 | .009131 | .003881 | .002417 |
| 41 | .004148 | -.003396 | -.021237 | .014325 | .000239 | .008731 |
| 42 | -.003817 | .000420 | -.026668 | .001821 | .000527 | .014317 |
| 43 | -.010254 | -.001310 | -.031995 | -.010897 | .006271 | .014173 |
| 44 | -.017328 | -.006215 | -.036466 | -.015585 | .011714 | .008273 |
| 45 | -.027661 | .003218 | -.038853 | -.017441 | .018800 | .005846 |
| 46 | -.026748 | .009725 | -.037211 | -.018018 | .023867 | .002856 |
| 47 | -.012559 | .010708 | -.033657 | -.018439 | .034740 | .001270 |
| 48 | -.001559 | .013634 | -.035682 | -.009865 | .046403 | -.000234 |
| 49 | .003865 | .020137 | -.037614 | .006480 | .045644 | -.001207 |
| 50 | -.000315 | .015003 | -.044427 | .006173 | .035025 | .003063 |
| 51 | -.007061 | .013635 | -.057232 | .015707 | .026117 | .011324 |
| 52 | -.015346 | .017060 | -.070869 | .022749 | .016837 | .012147 |
| 53 | -.018378 | .017296 | -.074373 | .008648 | .011300 | .014128 |
| 54 | -.017202 | .016106 | -.060777 | .006172 | .006091 | .010781 |
| 55 | -.014905 | .006214 | -.039669 | .008328 | -.009238 | -.000979 |
| 56 | -.003636 | .001513 | -.023054 | .014470 | -.022185 | -.017350 |
| 57 | -.000968 | .007018 | -.017384 | .022657 | -.029981 | -.031477 |
| 58 | .005818 | .007016 | -.007740 | .032506 | -.029688 | -.034447 |
| 59 | .015396 | -.000277 | .001632 | .027938 | -.027533 | -.030617 |
| 60 | .023248 | -.008618 | .006517 | .024774 | -.030265 | -.020889 |

RUN NO 91A 15M 6-18-63 2150-2300.EST)
61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.24442 10E 00 | 0.15826 10E 00 | 0.73716 10E-01 | 0.28925 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .811823 | .687317 | .584549 | .834706 |
| 2 | .587939 | .385012 | .241003 | .590984 |
| 3 | .424414 | .211742 | .084643 | .396178 |
| 4 | .291984 | .091784 | .026641 | .257486 |
| 5 | .179860 | .015846 | -.015614 | .154469 |
| 6 | .086723 | -.035634 | -.060489 | .076102 |
| 7 | .012720 | -.054860 | -.061100 | .017332 |
| 8 | -.023940 | -.059195 | -.066557 | -.036122 |
| 9 | -.053607 | -.076617 | -.073820 | -.092511 |
| 10 | -.081859 | -.099971 | -.081591 | -.132351 |
| 11 | -.101858 | -.116449 | -.092377 | -.148546 |
| 12 | -.120440 | -.124286 | -.094157 | -.152482 |
| 13 | -.141245 | -.127966 | -.085350 | -.147890 |
| 14 | -.155196 | -.127289 | -.080272 | -.136302 |
| 15 | -.163352 | -.126688 | -.076607 | -.127990 |
| 16 | -.168736 | -.121247 | -.063883 | -.119355 |
| 17 | -.170780 | -.102421 | -.050797 | -.110066 |
| 18 | -.180488 | -.095697 | -.062144 | -.104942 |
| 19 | -.188084 | -.098247 | -.083817 | -.113741 |
| 20 | -.188101 | -.110813 | -.077978 | -.130484 |
| 21 | -.193708 | -.116024 | -.052800 | -.150667 |
| 22 | -.194857 | -.113204 | -.058785 | -.170760 |
| 23 | -.182667 | -.107787 | -.079913 | -.180343 |
| 24 | -.167823 | -.116112 | -.080695 | -.181041 |
| 25 | -.155114 | -.102370 | -.074285 | -.176289 |
| 26 | -.144254 | -.085038 | -.060101 | -.178305 |
| 27 | -.133784 | -.078714 | -.042881 | -.178872 |
| 28 | -.114554 | -.063995 | -.037054 | -.163417 |
| 29 | -.081417 | -.039116 | -.055012 | -.139424 |
| 30 | -.042570 | -.008933 | -.069715 | -.107779 |
| 31 | -.007494 | .009917 | -.039050 | -.076317 |
| 32 | .017541 | .015387 | -.005121 | -.056602 |
| 33 | .024270 | .016102 | .017609 | -.047041 |
| 34 | .021504 | .019632 | .033729 | -.032567 |
| 35 | .007090 | .027630 | .024971 | -.017759 |
| 36 | -.008658 | .031676 | .031444 | -.001382 |
| 37 | -.025620 | .025479 | .032714 | .010219 |
| 38 | -.035216 | .036682 | .045259 | .013663 |
| 39 | -.044894 | .030669 | .042848 | .006092 |
| 40 | -.041773 | .026900 | .018213 | -.000631 |
| 41 | -.043632 | .007391 | .003665 | -.005375 |
| 42 | -.053154 | .004566 | .015215 | -.004593 |
| 43 | -.052223 | .021585 | .019361 | -.006615 |
| 44 | -.048386 | .031354 | .030251 | -.009868 |
| 45 | -.045290 | .018164 | .015769 | -.009339 |
| 46 | -.036679 | .026261 | .003722 | .003139 |
| 47 | -.031924 | .020201 | .016714 | .010424 |
| 48 | -.032046 | .012234 | .019343 | .011952 |
| 49 | -.018760 | .007035 | .024615 | .010705 |
| 50 | -.011468 | -.002368 | .016222 | .007008 |
| 51 | .000834 | .011573 | .015271 | .008188 |
| 52 | .018303 | .006837 | .004523 | .020709 |
| 53 | .030121 | .002954 | .012908 | .038834 |
| 54 | .028566 | -.006348 | .018007 | .063693 |
| 55 | .020248 | -.012044 | -.009493 | .088561 |
| 56 | .013252 | -.008048 | -.029034 | .098566 |
| 57 | .015589 | -.000162 | -.027296 | .088031 |
| 58 | .023200 | .012868 | -.026919 | .073480 |
| 59 | .024896 | .010416 | -.033535 | .065587 |
| 60 | .022673 | .008132 | -.046880 | .055563 |

RUN NO 91A 15M 6-18-63 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .023355 | -.035881 | .010595 | -.001928 | -.006612 | -.030374 |
| 1 | .143880 | -.372742 | .128536 | -.003696 | .155866 | -.292671 |
| 2 | .113435 | -.520204 | .169471 | .073929 | .408260 | -.383669 |
| 3 | .046605 | -.651251 | .184838 | .172281 | .592315 | -.472104 |
| 4 | .004985 | -.522097 | .137104 | .110114 | .483158 | -.440994 |
| 5 | .121724 | -.324889 | .090185 | -.009813 | .418094 | -.421260 |
| 6 | .235372 | -.286786 | .071354 | -.036581 | .472318 | -.430826 |
| 7-8 | .186107 | -.336686 | .055634 | -.051207 | .426239 | -.351161 |
| 9-11 | .113849 | -.208124 | .027987 | -.031911 | .170088 | -.223902 |
| 12-15 | .056721 | -.094084 | .013314 | .002797 | .111547 | -.138180 |
| 16-20 | -.007606 | -.052162 | .002436 | -.010613 | .071832 | -.099709 |
| 21-27 | -.008019 | -.041376 | .000523 | -.006405 | .033650 | -.068624 |
| 28-36 | -.001769 | -.011893 | -.000021 | -.004139 | .024031 | -.044910 |
| 37-47 | .005695 | -.012712 | -.000017 | -.005594 | .010885 | -.014002 |
| 48-60 | .001451 | -.003055 | -.000133 | -.000926 | .006609 | -.010702 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-03 | 10E-03 | 10E-03 |
| 1 | -.055056 | -.073032 | .864635 | -.138530 | .153784 | -.122672 |
| 2 | .037594 | -.061076 | .856590 | .728677 | .012032 | -.193513 |
| 3 | .102408 | -.073521 | .765193 | .861558 | -.039867 | -.176654 |
| 4 | .112361 | -.110745 | .679502 | .042545 | -.070565 | -.086417 |
| 5 | .064139 | -.095854 | .516363 | -.130403 | -.021517 | -.131154 |
| 6 | .072224 | -.057440 | .407005 | .340882 | .057695 | -.243601 |
| 7-8 | .169312 | -.033849 | .399833 | .298072 | .062074 | -.171232 |
| 9-11 | .046717 | .003409 | .174878 | .395903 | .045058 | -.063107 |
| 12-15 | -.024928 | -.015024 | .128962 | .289164 | .069669 | -.063807 |
| 16-20 | -.001301 | -.008251 | .031044 | .074156 | .071024 | -.053272 |
| 21-27 | .004217 | -.011362 | .011511 | .035872 | .019842 | -.027273 |
| 28-36 | .000064 | .000725 | .004211 | .108186 | .014929 | -.025883 |
| 37-47 | -.002625 | -.004090 | .002648 | .063086 | .002485 | -.009794 |
| 48-60 | .001987 | .002103 | -.000804 | .034369 | -.000353 | -.002282 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-03 |
| 0 | .018087 | .004603 | .017762 | .018297 |
| 1 | .217975 | .062705 | .212964 | .245667 |
| 2 | .287677 | .107091 | .361343 | .339590 |
| 3 | .338136 | .150064 | .498189 | .375107 |
| 4 | .278659 | .130757 | .433065 | .282958 |
| 5 | .179436 | .099650 | .372391 | .223025 |
| 6 | .142490 | .093958 | .397539 | .229365 |
| 7-8 | .138697 | .086710 | .357429 | .182009 |
| 9-11 | .081556 | .059073 | .276331 | .084524 |
| 12-15 | .048139 | .049027 | .232678 | .065337 |
| 16-20 | .025909 | .030140 | .171028 | .043339 |
| 21-27 | .020391 | .020567 | .143173 | .020250 |
| 28-36 | .013256 | .015457 | .104892 | .013023 |
| 37-47 | .008721 | .010705 | .061911 | .006062 |
| 48-60 | .004992 | .006706 | .050553 | .003766 |

RUN NO 91A 15M 6-18-63 2150-2300(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,V | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.95167 10E-01 | 0.53829 10E-01 | 0.17400 10E-01 | 0.33827 10E-01 | 0.10935 10E-01 | 0.61851 10E-02 |
| 0 | .087881 | -.464205 | .549491 | .055022 | .257101 | -.361603 |
| 1 | .044423 | -.101926 | .210438 | .035551 | .025326 | -.020832 |
| 2 | .016457 | -.001285 | .086428 | -.061079 | -.010375 | -.037525 |
| 3 | -.005981 | .004628 | .042658 | .027873 | .047696 | .032130 |
| 4 | -.020220 | .095527 | -.008448 | .025510 | .043449 | .053037 |
| 5 | -.020797 | .053666 | .024834 | .034493 | .072290 | .012901 |
| 6 | -.068662 | .017502 | .003754 | -.024394 | .025457 | .050054 |
| 7 | .047951 | -.043954 | -.007697 | -.044232 | .011431 | -.037676 |
| 8 | -.019291 | -.030012 | -.064092 | -.003404 | -.041482 | -.059220 |
| 9 | -.013200 | -.073786 | -.072873 | .030651 | -.081974 | .012548 |
| 10 | .025495 | .029300 | -.116728 | -.084661 | .011258 | -.012587 |
| 11 | .032586 | .171051 | -.194832 | -.024060 | -.004008 | .125682 |
| 12 | -.044561 | .105198 | -.145155 | .004921 | -.074779 | .061485 |
| 13 | .010785 | .039814 | -.085990 | -.015288 | .027845 | .015840 |
| 14 | -.007544 | .047118 | -.090420 | .015475 | -.037353 | .039937 |
| 15 | -.053378 | .054198 | -.086592 | .059452 | -.026996 | .033497 |
| 16 | .020410 | .059369 | -.096352 | .018233 | .022357 | .066367 |
| 17 | .003443 | .003459 | -.048053 | .052083 | -.038380 | .017057 |
| 18 | -.079555 | .057018 | -.037337 | .104041 | -.078606 | .032294 |
| 19 | .049775 | .022618 | .024611 | -.078488 | -.013008 | .010061 |
| 20 | .009318 | -.063735 | .053557 | -.009992 | -.019846 | -.035946 |
| 21 | .004649 | -.064887 | .080792 | -.056814 | .044147 | -.089336 |
| 22 | .057360 | -.097112 | .097021 | .007619 | .020887 | -.051767 |
| 23 | -.004136 | -.083070 | .088269 | -.031815 | .043988 | -.062837 |
| 24 | -.041948 | .019836 | .028406 | -.031142 | -.001916 | .029934 |
| 25 | -.071839 | .024157 | -.026024 | .047398 | -.082652 | .019256 |
| 26 | -.074412 | -.034786 | .06371 | .054573 | -.031927 | -.046410 |
| 27 | .033884 | -.090764 | .107415 | -.011644 | .034794 | -.075422 |
| 28 | .057203 | -.008228 | .055678 | -.043185 | -.039880 | .006966 |
| 29 | .006866 | -.028160 | .007655 | -.010907 | .024475 | -.045919 |
| 30 | .014721 | -.059666 | .001918 | -.056373 | -.041806 | -.045412 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 | 10E-03 |
| 0 | .000331 | -.001636 | .002158 | .028466 | .039562 | .000579 |
| 1 | .042721 | -.092979 | .069336 | .032380 | .286497 | -.067704 |
| 2 | .052985 | -.172043 | .119355 | .044429 | .281688 | -.135448 |
| 3 | .059189 | -.157098 | .120472 | .295609 | .213502 | -.121106 |
| 4 | .056239 | -.045806 | .051479 | .373066 | .072014 | -.030359 |
| 5 | .101370 | -.076442 | .029555 | -.092632 | .016329 | -.063955 |
| 6 | .140296 | -.166933 | .038553 | -.274087 | -.026290 | -.133515 |
| 7 | .082318 | -.217778 | .042515 | .074082 | -.038541 | -.152901 |
| 8 | .062140 | -.248724 | .058422 | .067107 | .048427 | -.183255 |
| 9-11 | .024316 | -.079683 | .041011 | .022060 | .133458 | -.065347 |
| 12-14 | -.005319 | -.098073 | .034709 | .412354 | .125664 | -.076551 |
| 15-21 | .008720 | -.096514 | .024858 | .218911 | .129461 | -.060574 |
| 22-30 | .038157 | -.093926 | .029202 | -.198605 | .150992 | -.157494 |

RUN NO 91A 15M 6-18-63 2150-2300(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.95167 10E-01 | 0.53829 10E-01 | 0.17400 10E-01 | 0.33827 10E-01 | 0.10935 10E-01 | 0.61851 10E-02 |
| 1 | .021860 | -.036603 | .166633 | .031735 | .017168 | -.072727 |
| 2 | -.027934 | -.000093 | .114261 | -.019046 | .083591 | -.062715 |
| 3 | -.016843 | .023120 | .128047 | -.036885 | .086526 | -.064487 |
| 4 | -.033713 | -.015882 | .062425 | -.058325 | .075561 | -.008072 |
| 5 | .014470 | .054697 | .008081 | .021889 | .061144 | -.043954 |
| 6 | .051916 | .041423 | .048119 | .085708 | -.077592 | -.064238 |
| 7 | .065392 | .022174 | .041911 | .045089 | -.055608 | -.025947 |
| 8 | .079342 | .058715 | .029463 | .046826 | -.033032 | -.015695 |
| 9 | -.011021 | .013339 | .078005 | .009832 | .024452 | -.028690 |
| 10 | .024373 | .038859 | .064450 | -.030354 | .076929 | -.024944 |
| 11 | .020444 | .027163 | .020326 | -.004214 | .027031 | -.026160 |
| 12 | -.039572 | -.018834 | -.018751 | -.031409 | .004030 | -.003069 |
| 13 | -.000347 | .000543 | -.076619 | -.022395 | -.053522 | .007641 |
| 14 | .004515 | -.046788 | -.009509 | -.029214 | -.007845 | .040893 |
| 15 | -.056911 | -.031156 | -.007691 | -.125725 | .004287 | .061314 |
| 16 | -.001193 | -.045706 | .007983 | .099716 | -.083795 | .000384 |
| 17 | .029324 | -.009049 | -.012327 | .027401 | -.032534 | -.011477 |
| 18 | .014615 | -.044285 | -.057829 | .017894 | -.029491 | .097410 |
| 19 | -.003166 | -.010006 | -.054463 | .043352 | .001143 | .038492 |
| 20 | -.003221 | .041099 | -.039942 | .037930 | .013947 | .039782 |
| 21 | .006895 | -.036607 | .001498 | .027224 | -.004479 | .001137 |
| 22 | -.042381 | -.023630 | -.023306 | -.012726 | .014292 | .005045 |
| 23 | -.048173 | .004426 | .035764 | -.054073 | .061214 | -.070132 |
| 24 | -.038994 | -.028530 | .061555 | .013031 | .030080 | -.061987 |
| 25 | -.017895 | -.018641 | -.007864 | -.006813 | .036879 | .035673 |
| 26 | .085977 | .008551 | -.026772 | .003201 | -.026558 | .015490 |
| 27 | .091411 | .050596 | -.019718 | .080766 | -.064981 | -.044577 |
| 28 | .021090 | .041654 | -.048490 | .007649 | -.022635 | .023727 |
| 29 | -.000972 | .060604 | -.029461 | .011234 | -.004199 | -.013553 |
| 30 | -.009857 | -.013852 | .060946 | -.032935 | .023156 | -.023391 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 |
| 1 | .079543 | .296491 | .329323 | .108206 | .014912 | -.049201 |
| 2 | .093870 | .717521 | .484933 | .082715 | .088308 | -.110318 |
| 3 | .066985 | .701990 | .534058 | .247175 | .158044 | -.129350 |
| 4 | -.008897 | -.003422 | .316558 | .187807 | .099281 | -.046161 |
| 5 | -.102147 | -.488167 | .225113 | -.304659 | .117804 | -.023286 |
| 6 | -.154236 | -.360041 | .262507 | -.676704 | .263640 | -.049123 |
| 7 | -.072129 | -.065281 | .334844 | -.308332 | .278374 | -.041695 |
| 8 | -.022937 | -.170077 | .497289 | -.102031 | .170587 | -.054303 |
| 9-11 | .052484 | -.170098 | .207848 | .214316 | -.094842 | -.038460 |
| 12-14 | .037565 | -.035704 | .159266 | .277274 | -.020065 | -.052802 |
| 15-21 | .008116 | -.325335 | .077933 | .008281 | -.013931 | .009589 |
| 22-30 | .038073 | .143060 | .095591 | .141968 | -.013489 | -.037444 |

RUN NO 91A 15M 6-18-63 2150-2300(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.15144 10E 00 | 0.59806 10E-01 | 0.19134 10E-01 | 0.19994 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .268302 | .073937 | -.027076 | .311124 |
| 2 | .001760 | -.069351 | -.023286 | .172428 |
| 3 | .002315 | -.010796 | -.106973 | .059685 |
| 4 | -.103366 | -.076845 | -.084922 | -.002448 |
| 5 | -.066161 | -.005527 | -.066560 | .063412 |
| 6 | .037274 | -.071054 | -.132091 | -.007182 |
| 7 | .048304 | -.076905 | .063163 | -.055486 |
| 8 | -.027660 | -.030226 | .043703 | -.059339 |
| 9 | -.036435 | .026119 | .002207 | -.159929 |
| 10 | -.183171 | .001671 | -.038624 | -.175892 |
| 11 | -.281417 | .004693 | -.109385 | -.215325 |
| 12 | -.161258 | -.087872 | -.090117 | -.210691 |
| 13 | -.122849 | -.125495 | .013179 | -.098006 |
| 14 | -.038799 | -.100280 | .021692 | -.135835 |
| 15 | -.086360 | -.051037 | -.048996 | -.117947 |
| 16 | -.072619 | .009519 | .003682 | -.087577 |
| 17 | -.017914 | .020706 | -.012460 | -.101358 |
| 18 | -.021344 | .115092 | -.014862 | -.076661 |
| 19 | -.011593 | .040905 | -.057790 | -.014606 |
| 20 | .030553 | .055934 | .091364 | .029691 |
| 21 | .081276 | .037363 | .039589 | .104258 |
| 22 | .120831 | -.109074 | .086396 | .042891 |
| 23 | .134414 | .025125 | -.017411 | .052399 |
| 24 | .004803 | -.103736 | -.060826 | .013141 |
| 25 | -.019245 | -.065488 | -.029804 | -.062864 |
| 26 | .106852 | .109148 | -.049480 | .041216 |
| 27 | .114191 | -.010045 | .106374 | .092574 |
| 28 | .045847 | -.062823 | -.010136 | .087097 |
| 29 | .046782 | .055796 | .098666 | .044441 |
| 30 | -.013321 | .031148 | .090041 | -.007487 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-03 |
| 0 | .003711 | .026187 | .001079 | .012316 |
| 1 | .068664 | .175095 | .025729 | .160600 |
| 2 | .116648 | .219001 | .046848 | .217040 |
| 3 | .124593 | .283478 | .064323 | .212332 |
| 4 | .063878 | .219342 | .057833 | .116831 |
| 5 | .042366 | .192970 | .064312 | .073614 |
| 6 | .060581 | .331106 | .085854 | .072810 |
| 7 | .092913 | .344332 | .100798 | .076346 |
| 8 | .121907 | .196316 | .117729 | .102504 |
| 9-11 | .073371 | .220670 | .066730 | .083974 |
| 12-14 | .053393 | .285967 | .076811 | .067570 |
| 15-21 | .060929 | .270886 | .078678 | .049506 |
| 22-30 | .047076 | .305793 | .130888 | .083561 |

RUN NO 91A 46M 6-18-63 2150-2300(EST)

GROSS STATISTICS

| | | |
|-----------------|------------------------|------------------|
| CLEAR STABLE | WIND SPEED 5.83 M/SEC | SIGMA A 3.90 DEG |
| | WIND DIRECTION 242 DEG | SIGMA E 2.2 DEG |
| | SOLAR RAD. 0 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN | 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|
|--|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.19007E-00 | 0.16132E-00 | 0.14204E-00 | 0.78549E-01 |
| V | 0.15718E-00 | 0.11372E-00 | 0.10989E-00 | 0.34543E-01 |
| W | 0.49979E-01 | 0.48872E-01 | 0.49102E-01 | 0.12408E-01 |
| T | 0.15489E-01 | 0.53164E-02 | 0.43012E-02 | 0.29690E-02 |
| E | 0.19862E-00 | 0.16196E-00 | 0.15051E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.07478 | 0.06889 | 0.06464 | 0.04807 |
| V | 0.06800 | 0.05784 | 0.05686 | 0.03188 |
| W | 0.03835 | 0.03792 | 0.03801 | 0.01911 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.24866E-01 | 0.19770E-01 | 0.19865E-01 | 0.20509E-02 |
| U,W | -0.38510E-01 | -0.37073E-01 | -0.37825E-01 | -0.11775E-01 |
| U,T | 0.11667E-01 | 0.13868E-01 | 0.10003E-01 | 0.85660E-02 |
| V,W | -0.98286E-02 | -0.94669E-02 | -0.95214E-02 | 0.17592E-02 |
| V,T | 0.72258E-02 | 0.27957E-02 | 0.33098E-02 | 0.44645E-04 |
| W,T | -0.46640E-02 | -0.54365E-02 | -0.51513E-02 | -0.20581E-02 |
| WE | 0.35350E-02 | 0.47576E-02 | 0.26185E-02 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.14386 | 0.14597 | 0.15900 | 0.03937 |
| U,W | -0.39511 | -0.41753 | -0.45293 | -0.37720 |
| U,T | 0.21503 | 0.47356 | 0.40469 | 0.56092 |
| V,W | -0.11089 | -0.12699 | -0.12962 | 0.08497 |
| V,T | 0.14644 | 0.11370 | 0.15224 | 0.00441 |
| W,T | -0.16763 | -0.33727 | -0.35447 | -0.33909 |

RUN NO 91A 46M 6-18-63 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.12495 10E 00 | 0.83523 10E-01 | 0.24716 10E-01 | 0.73455 10E-01 | 0.21736 10E-01 | 0.14529 10E-01 |
| 0 | .158962 | -.452850 | .404693 | -.129606 | .152098 | -.354303 |
| 1 | .123708 | -.346519 | .365938 | -.061067 | .127037 | -.284524 |
| 2 | .064065 | -.205744 | .278403 | .014897 | .069924 | -.174018 |
| 3 | .019965 | -.091790 | .189565 | .050279 | .016671 | -.098786 |
| 4 | -.014133 | -.015908 | .119451 | .068203 | -.012964 | -.042189 |
| 5 | -.039964 | .024002 | .062231 | .072605 | -.017958 | .001859 |
| 6 | -.055851 | .051349 | .016064 | .072598 | -.022640 | .042340 |
| 7 | -.060407 | .071493 | -.021943 | .058717 | -.023203 | .065011 |
| 8 | -.055127 | .076753 | -.044110 | .043643 | -.020296 | .075790 |
| 9 | -.042471 | .069726 | -.051476 | .018034 | -.010831 | .079582 |
| 10 | -.034987 | .058149 | -.054620 | -.004369 | -.001494 | .065698 |
| 11 | -.035411 | .040673 | -.059718 | -.018637 | .005527 | .045005 |
| 12 | -.030704 | .014120 | -.060705 | .024483 | .001170 | .037280 |
| 13 | -.024713 | .001166 | -.062083 | .015786 | -.002194 | .032943 |
| 14 | -.019472 | -.002660 | -.059201 | -.021456 | -.000448 | .018435 |
| 15 | -.012527 | .005812 | -.055590 | -.031030 | -.002593 | .002833 |
| 16 | -.012426 | .031982 | -.057469 | -.037331 | -.009201 | .000605 |
| 17 | -.010350 | .045445 | -.058850 | -.041052 | -.019103 | .002483 |
| 18 | -.004687 | .043439 | -.053306 | -.042231 | -.014320 | .001215 |
| 19 | .011659 | .038428 | -.047739 | -.051148 | -.002207 | .002139 |
| 20 | .036349 | .037319 | -.047569 | -.059841 | .005157 | .001335 |
| 21 | .043839 | .046906 | -.049121 | -.052815 | .005777 | .01850 |
| 22 | .034816 | .060529 | -.059044 | -.041637 | -.000149 | .025828 |
| 23 | .023578 | .071042 | -.074375 | -.023234 | -.007657 | .043953 |
| 24 | .003117 | .083719 | -.080406 | -.001514 | -.017103 | .058148 |
| 25 | -.018724 | .099439 | -.084173 | .019172 | -.028175 | .070028 |
| 26 | -.032108 | .109739 | -.084385 | .036771 | -.034051 | .081286 |
| 27 | -.036408 | .107251 | -.078778 | .038190 | -.031471 | .085511 |
| 28 | -.021000 | .087776 | -.068012 | .026171 | -.026898 | .072699 |
| 29 | .009669 | .064186 | -.053357 | .012516 | -.021441 | .050950 |
| 30 | .034626 | .037488 | -.040505 | .000992 | -.016818 | .026136 |
| 31 | .049542 | .008660 | -.028886 | -.013486 | -.001955 | .003062 |
| 32 | .054698 | -.024202 | -.010063 | -.021208 | .012423 | -.015575 |
| 33 | .058579 | -.042477 | .006005 | -.014312 | .015140 | -.024006 |
| 34 | .062967 | -.049409 | .016100 | .005572 | .001748 | -.021575 |
| 35 | .057514 | -.052815 | .022141 | .020696 | -.009011 | -.020498 |
| 36 | .047656 | -.050350 | .027976 | .021679 | -.013693 | -.017144 |
| 37 | .033254 | -.037865 | .024886 | .021847 | -.021843 | -.003602 |
| 38 | .011418 | -.018694 | .018559 | .029001 | -.025861 | .007753 |
| 39 | -.004062 | -.011185 | .015544 | .028525 | -.025923 | .010229 |
| 40 | -.019551 | -.006165 | .021094 | .022697 | -.023377 | .012448 |
| 41 | -.026045 | -.013001 | .023645 | .017959 | -.024078 | .023139 |
| 42 | -.025241 | -.020673 | .021418 | .003532 | -.012487 | .020814 |
| 43 | -.029896 | -.031557 | .018356 | -.004169 | -.000730 | .012635 |
| 44 | -.036771 | -.032426 | .012234 | -.007640 | -.006671 | .002566 |
| 45 | -.039691 | -.028571 | .008889 | -.015090 | -.013149 | -.009175 |
| 46 | -.039809 | -.030399 | .007324 | -.016818 | -.007253 | -.020587 |
| 47 | -.038687 | -.035738 | .007892 | -.015453 | .000177 | -.030582 |
| 48 | -.036034 | -.046866 | .011725 | -.014384 | .006159 | -.031171 |
| 49 | -.032339 | -.051257 | .018520 | -.005470 | -.007746 | -.036424 |
| 50 | -.016577 | -.048732 | .019587 | .009988 | .022467 | -.042028 |
| 51 | -.003110 | -.043544 | .019134 | .004297 | .042949 | -.037492 |
| 52 | .000405 | -.032675 | .015545 | -.011973 | .047278 | -.027251 |
| 53 | .004608 | -.016914 | .004446 | -.011748 | .041380 | -.012107 |
| 54 | .010878 | -.011384 | -.009704 | -.007207 | .029151 | -.001797 |
| 55 | .017606 | -.017232 | -.023836 | -.002215 | .021303 | -.003108 |
| 56 | .015172 | -.019598 | -.032657 | .000701 | .017135 | -.013329 |
| 57 | .003848 | -.011979 | -.037325 | -.002535 | .009783 | -.011479 |
| 58 | -.009048 | .002523 | -.040419 | .003927 | -.002088 | -.012198 |
| 59 | -.017733 | .014258 | -.040926 | .016956 | -.005732 | -.009343 |
| 60 | -.013901 | .020578 | -.041812 | .012230 | -.002061 | -.006381 |

RUN NO 91A 46M 6-18-63 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.12495 10E 00 | 0.83523 10E-01 | 0.24716 10E-01 | 0.73455 10E-01 | 0.21736 10E-01 | 0.14529 10E-01 |
| 1 | .001974 | -.028218 | .086688 | -.010417 | .047968 | -.032231 |
| 2 | .009049 | -.041319 | .118168 | -.020695 | .050949 | -.022024 |
| 3 | .011201 | -.045218 | .119807 | -.023839 | .034615 | -.003573 |
| 4 | .007803 | -.048558 | .117315 | -.018346 | .028018 | -.000787 |
| 5 | -.004928 | -.043268 | .104431 | -.019203 | .022284 | -.004512 |
| 6 | -.020408 | -.035716 | .087290 | -.023163 | .014651 | -.007415 |
| 7 | -.018743 | -.024408 | .071413 | -.018175 | -.007786 | -.009989 |
| 8 | -.003171 | -.011040 | .060782 | .000817 | -.030262 | -.015568 |
| 9 | .005485 | -.002150 | .049424 | .029106 | -.048841 | -.015224 |
| 10 | .010745 | -.000051 | .043423 | .040052 | -.051334 | -.009464 |
| 11 | .010822 | -.003362 | .043014 | .038957 | -.051365 | -.002841 |
| 12 | .009334 | -.012777 | .043189 | .029974 | -.045287 | -.006285 |
| 13 | .013618 | -.017516 | .044087 | .015220 | -.032382 | -.008776 |
| 14 | .011698 | -.012918 | .057690 | .010237 | -.021858 | -.022333 |
| 15 | .019580 | -.007924 | .071230 | .033031 | -.023252 | -.034378 |
| 16 | .033387 | -.009123 | .072430 | .046255 | -.027082 | -.030288 |
| 17 | .030863 | -.009442 | .063717 | .032629 | -.020076 | -.018382 |
| 18 | .010192 | -.015894 | .054492 | .004082 | -.002179 | -.011276 |
| 19 | -.010896 | -.015343 | .045935 | -.017041 | .013323 | .001965 |
| 20 | -.027293 | -.016183 | .042308 | -.026310 | .023338 | .014669 |
| 21 | -.025734 | -.013597 | .041168 | -.019009 | .038194 | .025113 |
| 22 | -.012663 | -.002468 | .035626 | -.010877 | .052770 | .029439 |
| 23 | .002165 | -.001523 | .030202 | -.009680 | .064782 | .029145 |
| 24 | .003442 | -.001240 | .023085 | -.016291 | .070907 | .027420 |
| 25 | -.003547 | -.001398 | .011533 | -.015449 | .069326 | .021383 |
| 26 | -.007927 | -.000919 | .001832 | -.017347 | .057251 | .017907 |
| 27 | -.001819 | -.004101 | .008735 | -.020680 | .034714 | .019701 |
| 28 | .003855 | .000420 | -.025441 | -.002647 | .008453 | .020661 |
| 29 | .003814 | -.010007 | -.046512 | .017136 | -.013504 | .017668 |
| 30 | -.000682 | .016502 | -.071096 | .020210 | -.026766 | .024535 |
| 31 | -.007173 | .015026 | -.087079 | .006254 | -.024936 | .051693 |
| 32 | .000020 | .007119 | -.088597 | .005475 | -.015702 | .066799 |
| 33 | .009540 | -.006750 | -.079504 | -.000119 | -.005171 | .056557 |
| 34 | .008570 | -.016259 | -.064690 | -.003920 | .001423 | .039812 |
| 35 | -.004115 | -.012231 | -.055929 | -.000898 | .005696 | .027110 |
| 36 | -.019538 | -.005271 | -.055296 | -.013776 | .018721 | .015378 |
| 37 | -.03512 | .000551 | -.053824 | -.033539 | .031032 | .008617 |
| 38 | -.037429 | .002876 | -.046432 | -.041951 | .032960 | -.000182 |
| 39 | -.024938 | .006077 | -.041790 | -.032024 | .024258 | -.011345 |
| 40 | -.015166 | .007367 | -.037075 | -.017032 | .013574 | -.017863 |
| 41 | -.020108 | .012904 | -.026084 | -.015110 | .000970 | -.023356 |
| 42 | -.026193 | .018315 | -.013582 | -.017639 | -.004103 | -.033266 |
| 43 | -.017133 | .012246 | .000907 | -.016928 | -.007876 | -.030066 |
| 44 | .003930 | .001515 | .008305 | -.002298 | -.019481 | -.022697 |
| 45 | .022658 | -.005107 | .009476 | .015575 | -.036567 | -.012419 |
| 46 | .032840 | -.002921 | .009986 | .034505 | -.045100 | -.005340 |
| 47 | .037315 | -.001390 | .014681 | .049061 | -.051293 | -.015512 |
| 48 | .037418 | .001541 | .021794 | .053698 | -.049485 | -.040079 |
| 49 | .037021 | .005709 | .025836 | .048198 | -.043444 | -.052446 |
| 50 | .016840 | .016491 | .023981 | .025297 | -.033636 | -.050173 |
| 51 | .007379 | .013032 | .026289 | .017787 | -.020214 | -.053535 |
| 52 | .011601 | .009444 | .022605 | .026993 | -.013155 | -.055621 |
| 53 | .011396 | .008822 | .016109 | .022305 | -.001290 | -.049779 |
| 54 | -.000459 | .013474 | .012265 | .001987 | .011229 | -.035332 |
| 55 | -.013623 | .014057 | .017563 | -.020921 | .017076 | -.020718 |
| 56 | -.010476 | .000678 | .029553 | -.028356 | .018488 | -.021152 |
| 57 | -.012417 | -.002160 | .041804 | -.022339 | .022931 | -.022827 |
| 58 | -.009129 | -.004172 | .042003 | -.024399 | .034344 | -.017268 |
| 59 | -.001119 | -.002370 | .041560 | -.022218 | .037618 | -.020782 |
| 60 | .005805 | .005442 | .034999 | -.009797 | .028506 | -.020903 |

RUN NO 91A 46M 6-18-63 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.14208 10E 00 | 0.10989 10E 00 | 0.49100 10E-01 | 0.42995 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .789256 | .665051 | .633787 | .814485 |
| 2 | .532336 | .314015 | .282842 | .574378 |
| 3 | .344603 | .136620 | .105107 | .387063 |
| 4 | .207360 | .054686 | .011445 | .262833 |
| 5 | .105838 | .029479 | -.041803 | .163927 |
| 6 | .023075 | -.008167 | -.099045 | .084411 |
| 7 | -.041120 | -.042125 | -.124825 | .029497 |
| 8 | -.070701 | -.074157 | -.122878 | -.016901 |
| 9 | -.079065 | -.093421 | -.094364 | -.048755 |
| 10 | -.082361 | -.100690 | -.074688 | -.070710 |
| 11 | -.086827 | -.102573 | -.053876 | -.086554 |
| 12 | -.101299 | -.106563 | -.029579 | -.109975 |
| 13 | -.108272 | -.113038 | -.021174 | -.124721 |
| 14 | -.107903 | -.128222 | -.008611 | -.129194 |
| 15 | -.110083 | -.148409 | -.028131 | -.138329 |
| 16 | -.128065 | -.138287 | -.073778 | -.150006 |
| 17 | -.147621 | -.119482 | -.094395 | -.159171 |
| 18 | -.148237 | -.117775 | -.093915 | -.161650 |
| 19 | -.143501 | -.126945 | -.079865 | -.159537 |
| 20 | -.139189 | -.122478 | -.064312 | -.157900 |
| 21 | -.151463 | -.102525 | -.084294 | -.156879 |
| 22 | -.159088 | -.095720 | -.101738 | -.164401 |
| 23 | -.161469 | -.087132 | -.110673 | -.176245 |
| 24 | -.166168 | -.099732 | -.123996 | -.184247 |
| 25 | -.177834 | -.101661 | -.146672 | -.185361 |
| 26 | -.186491 | -.103380 | -.156710 | -.186222 |
| 27 | -.180960 | -.099956 | -.133017 | -.189691 |
| 28 | -.162846 | -.079985 | -.098561 | -.183074 |
| 29 | -.146256 | -.061290 | -.076811 | -.158231 |
| 30 | -.114306 | -.017978 | -.044604 | -.125793 |
| 31 | -.070512 | .053019 | .005382 | -.087641 |
| 32 | -.031286 | .091443 | .055764 | -.052262 |
| 33 | .007413 | .107901 | .054390 | -.027496 |
| 34 | .030053 | .097465 | .036152 | -.007241 |
| 35 | .036698 | .086592 | .040387 | .010397 |
| 36 | .037239 | .086596 | .054426 | .025805 |
| 37 | .032206 | .094264 | .039450 | .033624 |
| 38 | .027365 | .093860 | .022954 | .034962 |
| 39 | .028682 | .071598 | .012051 | .036191 |
| 40 | .029197 | .053170 | .014447 | .049381 |
| 41 | .038395 | .053104 | .019796 | .053590 |
| 42 | .052992 | .047924 | .018327 | .051507 |
| 43 | .061145 | .013304 | .030747 | .045158 |
| 44 | .046524 | -.031821 | .042240 | .037318 |
| 45 | .031706 | -.054347 | .050619 | .038381 |
| 46 | .024689 | -.059051 | .038551 | .037422 |
| 47 | .023229 | -.052662 | .036193 | .030465 |
| 48 | .020855 | -.053145 | .045380 | .019337 |
| 49 | .023741 | -.043122 | .040492 | .014845 |
| 50 | .024326 | -.024316 | .040963 | .020736 |
| 51 | .034950 | -.014769 | .044103 | .025017 |
| 52 | .031702 | -.013214 | .043396 | .012999 |
| 53 | .028288 | .001132 | .021363 | -.001799 |
| 54 | .026635 | .018156 | .010089 | -.012071 |
| 55 | .020825 | .018380 | .018603 | -.014522 |
| 56 | .009188 | .009427 | .030227 | -.017160 |
| 57 | -.004703 | .009111 | .021721 | -.022057 |
| 58 | -.015422 | .019423 | .008511 | -.022360 |
| 59 | -.022107 | .011869 | -.000637 | -.024982 |
| 60 | -.024300 | .006206 | .011820 | -.032965 |

RUN NO 91A 46H 6-18-63 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .006470 | -.002529 | .009467 | -.000955 | .008243 | -.012768 |
| 1 | -.029373 | -.119906 | .082224 | .011839 | .194553 | -.239256 |
| 2 | -.045412 | -.276446 | .117322 | .049713 | .240163 | -.379029 |
| 3 | .077579 | -.359755 | .143521 | .101517 | .193723 | -.431937 |
| 4 | .190024 | -.222988 | .107740 | .076942 | .167369 | -.343411 |
| 5 | .150716 | -.163186 | .083440 | -.009528 | .177572 | -.350471 |
| 6 | .219600 | -.273460 | .091864 | -.076928 | .206185 | -.492015 |
| 7-8 | .207395 | -.325856 | .073850 | -.101552 | .253251 | -.498562 |
| 9-11 | .128576 | -.210362 | .037556 | -.076337 | .226649 | -.227453 |
| 12-15 | .062604 | -.091633 | .018250 | -.057262 | .126306 | -.115169 |
| 16-20 | .035681 | -.083521 | .008999 | -.029700 | .079552 | -.076837 |
| 21-27 | .023414 | -.039961 | .005600 | -.027891 | .042920 | -.057373 |
| 28-36 | .013068 | -.017311 | .000900 | -.017029 | -.001219 | -.033905 |
| 37-47 | .005321 | -.014771 | .000246 | -.009162 | .001314 | -.012540 |
| 48-60 | .001247 | -.009735 | .000059 | -.005761 | -.000592 | -.003199 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 |
| 1 | -.013170 | -.575157 | .426155 | .080398 | .098202 | .090489 |
| 2 | .336169 | -.632910 | .796043 | .304590 | -.043115 | -.032494 |
| 3 | .414507 | -.594346 | .833432 | .424565 | -.257872 | -.175083 |
| 4 | -.066757 | -.460908 | .262301 | .056820 | -.212312 | -.062972 |
| 5 | -.088607 | -.375270 | .127687 | -.165016 | .011133 | .053235 |
| 6 | -.403038 | -.419079 | .396080 | -.615236 | .288009 | .020600 |
| 7-8 | -.379775 | -.621589 | .386297 | -.651164 | .279731 | .009836 |
| 9-11 | .430953 | -.414150 | .299528 | -.117549 | .135772 | -.050911 |
| 12-15 | .119317 | -.147638 | .105946 | .000545 | .033960 | .005836 |
| 16-20 | .077290 | .017485 | .081588 | -.005389 | .036186 | -.038073 |
| 21-27 | -.110471 | -.052052 | .045684 | -.030617 | .050134 | -.023602 |
| 28-36 | .018482 | -.029230 | .030999 | .031790 | .023462 | -.019947 |
| 37-47 | -.021711 | -.013514 | .008218 | .006267 | .008103 | -.004454 |
| 48-60 | -.000112 | .007835 | -.001450 | -.000357 | -.003051 | -.000174 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-03 |
| 0 | .007408 | .002259 | .004521 | .036330 |
| 1 | .097137 | .030624 | .135057 | .371276 |
| 2 | .149814 | .062379 | .272542 | .521277 |
| 3 | .177220 | .104419 | .359339 | .592088 |
| 4 | .124318 | .091020 | .257580 | .404858 |
| 5 | .090338 | .056197 | .192350 | .288963 |
| 6 | .099507 | .059962 | .259664 | .298600 |
| 7-8 | .087111 | .054592 | .316793 | .230496 |
| 9-11 | .058025 | .042019 | .239238 | .150594 |
| 12-15 | .031059 | .032181 | .133435 | .091417 |
| 16-20 | .019307 | .026973 | .115810 | .058910 |
| 21-27 | .014762 | .019307 | .089999 | .038087 |
| 28-36 | .007714 | .011285 | .054279 | .021623 |
| 37-47 | .005435 | .007340 | .036790 | .010690 |
| 48-60 | .003197 | .004285 | .025224 | .009168 |

RUN NO 91A 46M 6-18-63 2150-2300(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.52091 10E-01 | 0.31205 10E-01 | 0.15274 10E-01 | 0.20696 10E-01 | 0.10130 10E-01 | 0.60684 10E-02 |
| 0 | .039371 | -.377378 | .560829 | .085000 | .004407 | -.339157 |
| 1 | -.063996 | .000839 | .218478 | .004914 | -.018380 | -.032094 |
| 2 | .013816 | .053527 | .099115 | -.056675 | .001584 | .003608 |
| 3 | .009283 | .067028 | .019170 | .057695 | -.04'406 | .059695 |
| 4 | -.021501 | -.047844 | .032006 | .073919 | -.010885 | .017002 |
| 5 | -.019666 | -.014532 | -.060942 | -.012489 | .036759 | -.001973 |
| 6 | -.016526 | .061255 | -.113721 | .001995 | .014074 | .020754 |
| 7 | .036891 | .040798 | -.062441 | .028961 | .045618 | .029519 |
| 8 | .040844 | .024101 | -.114780 | -.093536 | .059543 | .103683 |
| 9 | .037311 | -.051917 | -.091227 | -.032232 | .039812 | -.002377 |
| 10 | -.013291 | .073155 | -.126775 | .067919 | .024287 | .066078 |
| 11 | .045629 | .088127 | -.127594 | -.080290 | .047437 | .067578 |
| 12 | .032274 | .002369 | -.101768 | -.076118 | -.013343 | .093601 |
| 13 | .026591 | -.009087 | -.074725 | .011509 | -.013127 | .054829 |
| 14 | .017344 | -.094775 | -.047070 | -.025194 | -.015744 | -.041120 |
| 15 | .004045 | .024121 | -.023157 | .027485 | -.062272 | -.070485 |
| 16 | -.047584 | .037975 | .042118 | .001585 | -.083755 | -.081119 |
| 17 | -.059103 | -.000026 | .067011 | .052103 | -.034385 | -.061209 |
| 18 | -.080333 | -.084190 | .120485 | -.044906 | -.052314 | -.062934 |
| 19 | -.018634 | -.041282 | .078555 | -.069772 | -.040056 | -.037183 |
| 20 | .011769 | -.055351 | .108598 | .035725 | -.028600 | -.049521 |
| 21 | -.063370 | -.066556 | .110571 | .072471 | -.081153 | -.076668 |
| 22 | -.004032 | -.030409 | .052280 | -.038031 | -.015503 | -.031412 |
| 23 | .043982 | .016313 | .021305 | -.058294 | .064739 | .050144 |
| 24 | -.024597 | .168091 | -.081038 | .031771 | .031340 | .131280 |
| 25 | -.017914 | .025627 | -.055135 | .038998 | .005625 | .040177 |
| 26 | .011812 | .034536 | -.101944 | -.036130 | .046506 | .003203 |
| 27 | .048392 | .042677 | -.053747 | .008495 | .118763 | .004895 |
| 28 | -.032277 | .014390 | -.112656 | .025530 | .104772 | .053584 |
| 29 | -.017244 | .039558 | -.099874 | .024834 | .034389 | .054581 |
| 30 | .032563 | -.004327 | -.060148 | .064557 | .004200 | .005516 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-03 | 10E-02 | 10E-02 | 10E-03 | 10E-03 | 10E-03 |
| 0 | .010614 | -.002145 | .004182 | -.012843 | .001428 | .006726 |
| 1 | .208295 | -.002919 | .032474 | .095438 | .099919 | .033280 |
| 2 | -.167682 | -.017399 | .071489 | .204005 | .042692 | -.047916 |
| 3 | -.726236 | -.060415 | .123630 | .232582 | -.166771 | -.196954 |
| 4 | -.349668 | -.051837 | .087160 | .101879 | -.181570 | -.163191 |
| 5 | .332082 | -.024582 | .040776 | -.084366 | -.013269 | -.019687 |
| 6 | .189364 | -.034844 | .047448 | -.161307 | .046994 | -.038124 |
| 7 | -.080681 | -.025500 | .045370 | -.089726 | .052014 | -.106508 |
| 8 | .144835 | -.044706 | .036146 | -.028351 | .032830 | -.132529 |
| 9-11 | -.147357 | -.041450 | .026376 | -.032173 | .037396 | -.092391 |
| 12-14 | -.247281 | -.104355 | .029659 | .197647 | .015544 | -.126007 |
| 15-21 | .240277 | -.049388 | .024622 | .250784 | -.035597 | -.065189 |
| 22-30 | .523999 | -.063420 | .025429 | -.037234 | .046121 | -.108088 |

RUN NC 91A 46N 6-18-63 2150-2300(EST)
301 PCINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.52091 10E-01 | 0.31205 10E-01 | 0.15274 10E-01 | 0.20696 10E-01 | 0.10130 10E-01 | 0.60684 10E-02 |
| 1 | -.00854 | -.075004 | .108150 | .063033 | -.003834 | -.004263 |
| 2 | .011970 | -.023307 | .087837 | .023285 | .039762 | .031564 |
| 3 | -.074088 | -.058120 | .008929 | -.052786 | .069623 | .081542 |
| 4 | -.021329 | -.040438 | -.003701 | .029207 | .039745 | .029840 |
| 5 | .001874 | .011575 | -.002607 | .064754 | .040001 | -.020133 |
| 6 | -.038852 | -.028058 | .021849 | -.026339 | .048717 | .033690 |
| 7 | -.029800 | -.011932 | -.043548 | .034115 | .002243 | .105969 |
| 8 | -.000256 | -.050971 | -.001730 | -.031088 | .072390 | .061147 |
| 9 | -.015267 | .001717 | .002499 | .012252 | .079538 | -.001467 |
| 10 | -.014839 | .049942 | .022615 | .014494 | .033928 | -.060935 |
| 11 | .065414 | -.004747 | -.025254 | .001609 | -.040432 | -.005510 |
| 12 | .034201 | -.000144 | -.052707 | -.027536 | .031672 | .047946 |
| 13 | -.017365 | .052369 | -.040547 | -.015896 | .072025 | .013948 |
| 14 | .038391 | .107903 | -.031554 | .037487 | -.034682 | -.062454 |
| 15 | .050053 | .065517 | .013376 | -.004379 | -.036723 | -.070529 |
| 16 | -.001370 | .056269 | .048989 | -.000995 | -.003425 | -.066561 |
| 17 | .008975 | -.013677 | -.012024 | -.006480 | -.006597 | -.016587 |
| 18 | .011828 | -.028726 | -.046882 | .017542 | -.038777 | .034565 |
| 19 | .045643 | .034844 | .023668 | -.001009 | -.079472 | -.004608 |
| 20 | .016732 | -.040659 | .026228 | -.037310 | -.062148 | .017008 |
| 21 | -.103745 | -.018549 | .017258 | .017782 | -.007602 | -.012367 |
| 22 | -.068028 | -.044463 | .033647 | .029109 | -.003529 | .008812 |
| 23 | .014878 | -.087824 | .029907 | .017624 | .011564 | .064304 |
| 24 | -.065769 | -.032101 | .017100 | -.015279 | .093991 | .040786 |
| 25 | -.088974 | -.044014 | -.001969 | .041900 | .094956 | .006089 |
| 26 | -.025151 | -.001232 | -.027232 | -.007439 | .077307 | .008523 |
| 27 | -.025674 | .023812 | -.041516 | .014718 | .051418 | .005228 |
| 28 | .017862 | -.018791 | -.026457 | .087500 | -.051363 | -.004681 |
| 29 | .016380 | -.033557 | -.037488 | -.067591 | -.010252 | -.000622 |
| 30 | .076467 | .024313 | -.010224 | .009453 | -.007762 | -.012857 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 |
| 1 | .026951 | .174297 | -.049033 | .057731 | .182257 | .039745 |
| 2 | -.213297 | -.138616 | -.009467 | .078352 | .223053 | .078406 |
| 3 | -.799480 | -.665541 | .129640 | .114016 | .194214 | .124801 |
| 4 | -.499795 | -.457353 | .188669 | .077711 | .022454 | .061260 |
| 5 | -.059742 | .011316 | .124744 | .074499 | .030978 | -.009551 |
| 6 | -.037738 | -.092935 | .122744 | .047277 | .045538 | .001794 |
| 7 | .103747 | -.301762 | .158955 | -.025344 | .008002 | .011893 |
| 8 | -.025901 | -.295670 | .252577 | .002937 | .054732 | -.008765 |
| 9-11 | -.054468 | -.204845 | .139637 | .007135 | .015330 | .064084 |
| 12-14 | .254641 | .080116 | .218387 | .215229 | -.084012 | -.076908 |
| 15-21 | -.000231 | -.154764 | .047975 | .174386 | -.020631 | -.015003 |
| 22-30 | -.259886 | -.136975 | -.020553 | -.049966 | .000416 | .009057 |

RUN NO 91A 46M 6-18-63 2150-2300(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.78541 10E-01 | 0.34549 10E-01 | 0.12398 10E-01 | 0.29703 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .278314 | .049391 | -.046069 | .403515 |
| 2 | .024428 | -.100390 | -.138235 | .128026 |
| 3 | -.073967 | .076729 | -.063608 | .009905 |
| 4 | -.025735 | .060336 | -.016022 | .012486 |
| 5 | -.096589 | -.080777 | .096441 | -.106416 |
| 6 | -.106817 | -.064682 | -.013839 | -.148248 |
| 7 | -.058958 | -.063118 | -.058825 | -.119009 |
| 8 | -.067377 | -.015934 | -.094871 | -.191526 |
| 9 | -.078813 | .102515 | .031502 | -.142438 |
| 10 | -.147933 | -.099747 | -.040120 | -.220517 |
| 11 | -.109982 | -.077311 | -.008524 | -.181649 |
| 12 | -.107289 | .020933 | -.072459 | -.211085 |
| 13 | -.060565 | -.064471 | -.065168 | -.096849 |
| 14 | .022352 | -.118543 | .010164 | -.064379 |
| 15 | -.121672 | -.033369 | -.042827 | .072957 |
| 16 | -.100535 | -.051448 | .045770 | .154462 |
| 17 | .006762 | .051739 | .080593 | .145097 |
| 18 | .190537 | .032974 | -.038889 | .118341 |
| 19 | .091299 | .025940 | -.152661 | .124499 |
| 20 | .092844 | .048392 | .094843 | .145074 |
| 21 | .074203 | .113604 | .117198 | .082349 |
| 22 | .087586 | -.024318 | .023963 | .054126 |
| 23 | -.010628 | -.029674 | -.003107 | .011556 |
| 24 | -.153423 | .000859 | -.111550 | -.098027 |
| 25 | -.063968 | -.072080 | .035308 | -.132546 |
| 26 | -.069458 | -.112718 | .027919 | -.142267 |
| 27 | .029227 | -.019521 | -.011530 | -.065026 |
| 28 | -.028787 | .006455 | -.010681 | -.119688 |
| 29 | -.024003 | .023592 | -.115681 | -.154226 |
| 30 | -.033569 | .057083 | .051457 | -.116003 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .022257 | .029877 | .022467 | .019025 |
| 1 | .245853 | .142448 | .227585 | .113020 |
| 2 | .446960 | .142953 | .349791 | .215859 |
| 3 | .671214 | .168122 | .455409 | .392621 |
| 4 | .509739 | .119178 | .335853 | .314876 |
| 5 | .373615 | .108700 | .225350 | .142808 |
| 6 | .482055 | .158906 | .255625 | .141177 |
| 7 | .428212 | .140453 | .362879 | .176364 |
| 8 | .387036 | .097441 | .480110 | .164492 |
| 9-11 | .365072 | .087467 | .542397 | .106982 |
| 12-14 | .346756 | .166676 | .777794 | .108761 |
| 15-21 | .264323 | .209809 | .583774 | .088614 |
| 22-30 | .270385 | .151230 | .744176 | .075992 |

RUN NO 91A 15M 6-18-63 . 2150-2300(EST)
 RUN NO 91A 46M 6-18-63 . 2150-2300(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .228117 | .156445 | .066822 | .136381 |
| 1 | .191228 | .164118 | .218592 | .172631 |
| 2 | .078920 | .051612 | .221347 | .262339 |
| 3 | .082991 | .162476 | .247704 | .315480 |
| 4 | .071006 | .191426 | .222293 | .214992 |
| 5 | .063932 | .108974 | .245804 | .028472 |
| 6 | .052838 | .046555 | .286635 | .074116 |
| 7-8 | .112845 | .100558 | .102781 | .159042 |
| 9-11 | .159465 | .133772 | .061915 | .048275 |
| 12-15 | .106439 | .054613 | .031287 | .086740 |
| 16-20 | .078999 | .080356 | .123578 | .074421 |
| 21-27 | .162743 | .102558 | .114215 | .139901 |
| 28-36 | .099353 | .099046 | .076374 | .120097 |
| 37-47 | .096628 | .083429 | .103648 | .123858 |
| 48-60 | .101151 | .104429 | .123348 | .102538 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .533800 | .843850 | .157589 | .070843 |
| 1 | .255563 | .745111 | .183985 | .070705 |
| 2 | .135079 | .592045 | .095100 | .101989 |
| 3 | .033311 | .376123 | .261731 | .277696 |
| 4 | .270599 | .122267 | .304583 | .425678 |
| 5 | .119112 | .215511 | .412584 | .072709 |
| 6 | .381563 | .302792 | .378367 | .285958 |
| 7 | .091800 | .303139 | .298969 | .086204 |
| 8 | .577235 | .184595 | .273835 | .490308 |
| 9-11 | .388156 | .131763 | .339233 | .420453 |
| 12-14 | .254353 | .213675 | .234756 | .544732 |
| 15-21 | .214018 | .263513 | .256909 | .228465 |
| 22-30 | .272303 | .277497 | .367498 | .173109 |

RUN NO 91B 46M 6-18-63 2306-0010(FEST)

GROSS STATISTICS

| | | |
|-----------------|------------------------|------------------|
| CLEAR STABLE | WIND SPEED 6.00 M/SEC | SIGMA A 3.70 DEG |
| | WIND DIRECTION 238 DEG | SIGMA E 1.4 DEG |
| | SOLAR RAD. 0 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|------------------|-------------------------|--------------------------------|-------------------------------|------------------------------------|
| VARIANCES | | | | |
| U | 0.18508E-00 | 0.83749E-01 | 0.79184E-01 | 0.37133E-01 |
| V | 0.14439E-00 | 0.71072E-01 | 0.62722E-01 | 0.28790E-01 |
| W | 0.21782E-01 | 0.20196E-01 | 0.20597E-01 | 0.44192E-02 |
| T | 0.19164E-01 | 0.72531E-02 | 0.61527E-02 | 0.47555E-02 |
| E | 0.17563E-00 | 0.87525E-01 | 0.81252E-01 | |

| | ----- | ----- | ----- | ----- |
|-------------------------|---------|---------|---------|---------|
| GUSTINESS RATIOS | | | | |
| U | 0.07170 | 0.04823 | 0.04690 | 0.03212 |
| V | 0.06333 | 0.04443 | 0.04174 | 0.02828 |
| W | 0.02460 | 0.02369 | 0.02392 | 0.01108 |

| | ----- | ----- | ----- | ----- |
|--------------------|--------------|--------------|--------------|--------------|
| COVARIANCES | | | | |
| U,V | 0.28489E-01 | 0.18489E-01 | 0.15459E-01 | 0.78746E-02 |
| U,W | -0.17750E-01 | -0.15448E-01 | -0.16864E-01 | -0.40732E-02 |
| U,T | 0.76361E-02 | 0.12076E-01 | 0.10705E-01 | 0.78369E-02 |
| V,W | -0.36005E-02 | -0.71182E-02 | -0.72028E-02 | -0.10612E-02 |
| V,T | 0.56739E-02 | 0.62839E-02 | 0.42555E-02 | 0.34186E-02 |
| W,T | -0.44889E-02 | -0.33374E-02 | -0.38690E-02 | -0.10908E-02 |
| WE | 0.33843E-03 | 0.12856E-02 | 0.20164E-02 | |

| | ----- | ----- | ----- | ----- |
|-------------------------------|----------|----------|----------|----------|
| NORMALIZED COVARIANCES | | | | |
| U,V | 0.17427 | 0.23965 | 0.21935 | 0.24084 |
| U,W | -0.27955 | -0.37562 | -0.41757 | -0.31796 |
| U,T | 0.12822 | 0.48997 | 0.48498 | 0.58975 |
| V,W | -0.06420 | -0.18788 | -0.20040 | -0.09408 |
| V,T | 0.10786 | 0.27677 | 0.21662 | 0.29216 |
| W,T | -0.21971 | -0.27575 | -0.34369 | -0.23794 |

RUN NO 918 46M 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | K,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.70480 10E-01 | 0.40380 10E-01 | 0.22071 10E-01 | 0.35947 10E-01 | 0.19647 10E-01 | 0.11257 10E-01 |
| 0 | .219109 | -.417626 | .485026 | -.200518 | .216408 | -.343815 |
| 1 | .162895 | -.277873 | .434724 | -.093267 | .169405 | -.265036 |
| 2 | .078583 | -.122041 | .342188 | .023227 | .094693 | -.149808 |
| 3 | .028187 | -.036932 | .254474 | .041151 | .045864 | -.072113 |
| 4 | .003203 | -.001580 | .184833 | .025943 | .014207 | -.032924 |
| 5 | -.007944 | .012081 | .137905 | .020101 | .003154 | -.008661 |
| 6 | -.015335 | .016745 | .102415 | .011993 | -.004926 | -.006961 |
| 7 | -.021463 | .023919 | .074558 | .016546 | -.008573 | -.005922 |
| 8 | -.022462 | .025918 | .049682 | .040335 | -.010469 | .000232 |
| 9 | -.014338 | .027094 | .027185 | .026317 | -.003136 | .007071 |
| 10 | -.01496 | .021113 | .004800 | .012147 | .006543 | .015706 |
| 11 | -.005047 | .016806 | -.012588 | .001121 | .010268 | .020456 |
| 12 | .010174 | .023981 | -.029304 | -.011790 | .007158 | .030081 |
| 13 | .006974 | .032046 | -.049529 | -.014925 | .004599 | .038920 |
| 14 | -.003316 | .011365 | -.070367 | -.006433 | .005119 | .038611 |
| 15 | -.006546 | .018978 | -.090634 | -.012492 | .002605 | .042299 |
| 16 | -.003974 | .008668 | -.108127 | -.025237 | .001190 | .038080 |
| 17 | -.006607 | .011434 | -.121494 | -.012033 | -.009583 | .037540 |
| 18 | -.021478 | .010262 | -.125687 | .005733 | -.012651 | .032965 |
| 19 | -.015595 | .013869 | -.128329 | -.009139 | -.005533 | .036537 |
| 20 | -.010001 | .033350 | -.132927 | -.022698 | .000266 | .039240 |
| 21 | -.004573 | .048396 | -.137761 | -.029993 | -.004969 | .043853 |
| 22 | -.004415 | .065239 | -.148613 | -.020998 | -.021011 | .058812 |
| 23 | -.016368 | .076564 | -.152538 | -.002098 | -.037368 | .077949 |
| 24 | -.030738 | .071340 | -.161200 | -.010707 | -.053843 | .087293 |
| 25 | -.044254 | .060872 | -.156612 | .025497 | -.060619 | .095184 |
| 26 | -.046955 | .061930 | -.148299 | .022326 | -.058623 | .090950 |
| 27 | -.038218 | .054236 | -.131563 | .017645 | -.045005 | .070777 |
| 28 | -.038737 | .045051 | -.11112 | -.002091 | -.030949 | .055425 |
| 29 | -.043756 | .040421 | -.097221 | .034513 | -.026253 | .047155 |
| 30 | -.142346 | .023125 | -.083623 | .027648 | -.026698 | .043501 |
| 31 | -.013508 | .012658 | -.070106 | .009946 | -.03094 | .026449 |
| 32 | -.035002 | .009504 | -.058176 | .005042 | -.040755 | .006989 |
| 33 | -.039138 | .005777 | -.044074 | .014425 | -.055640 | .001652 |
| 34 | -.028163 | -.026661 | -.026488 | .014854 | -.056779 | -.009307 |
| 35 | -.021101 | -.016453 | -.012231 | .017713 | -.053682 | -.013107 |
| 36 | -.023200 | -.021756 | .002983 | .026635 | -.052859 | -.011222 |
| 37 | -.011910 | -.033741 | .017185 | .012753 | -.042643 | -.025543 |
| 38 | -.001926 | -.032157 | .021761 | .002209 | -.034261 | -.042574 |
| 39 | .014973 | -.022294 | .029141 | .003380 | -.030094 | -.044750 |
| 40 | .031876 | -.013081 | .037974 | .005438 | -.022984 | .041152 |
| 41 | .039072 | -.003631 | .037627 | -.011785 | -.003840 | -.035824 |
| 42 | .043223 | -.005665 | .040392 | -.040530 | .012009 | -.037554 |
| 43 | .042335 | -.008139 | .049609 | -.039108 | .018519 | -.030758 |
| 44 | .029221 | -.014388 | .049513 | -.012322 | .019980 | -.023997 |
| 45 | .017101 | -.010479 | .031101 | .016605 | .020307 | -.012022 |
| 46 | .003365 | .007056 | .012053 | .029231 | .021030 | .004512 |
| 47 | -.003895 | .015201 | -.004173 | .027212 | .018049 | .014308 |
| 48 | -.004950 | .009712 | -.012948 | .014770 | .018134 | .013418 |
| 49 | -.002054 | .001441 | -.009542 | .002170 | .028002 | .008439 |
| 50 | .001851 | .001467 | .003546 | .006008 | .039605 | .004531 |
| 51 | .010154 | .006975 | .010850 | -.000701 | .040050 | .006234 |
| 52 | .013473 | .004175 | .009880 | -.004495 | .032094 | .011126 |
| 53 | .020418 | .004989 | .007519 | -.006561 | .031411 | .013481 |
| 54 | .025817 | .007302 | .007542 | -.007836 | .043028 | .011243 |
| 55 | .031211 | .009041 | .009734 | -.040081 | .055248 | .008911 |
| 56 | .027858 | .001102 | .012931 | -.043610 | .059681 | .002718 |
| 57 | .019609 | .005967 | .016507 | -.019550 | .050744 | -.000965 |
| 58 | .021780 | .001951 | .025902 | -.014045 | .046837 | -.015066 |
| 59 | .034345 | -.027851 | .037562 | -.028725 | .046411 | -.037981 |
| 60 | .034815 | -.040836 | .036161 | -.035640 | .036867 | -.042470 |

RUN NC 91B 46M 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.70480 10E-01 | 0.40380 10E-01 | 0.22071 10E-01 | 0.35947 10E-01 | 0.19647 10E-01 | 0.11257 10E-01 |
| 1 | -.031179 | -.024197 | .068714 | -.083204 | .057171 | -.008490 |
| 2 | -.041353 | -.034776 | .093379 | -.103501 | .065122 | .019624 |
| 3 | -.037183 | -.022298 | .098562 | -.094551 | .056513 | .03405 |
| 4 | -.027224 | -.018425 | .093917 | -.078477 | .054657 | .035123 |
| 5 | -.020513 | -.019716 | .089169 | -.061200 | .047396 | .035294 |
| 6 | -.024666 | -.011834 | .080683 | -.046431 | .044353 | .035784 |
| 7 | -.045882 | .002005 | .068314 | -.050836 | .045146 | .035368 |
| 8 | -.063872 | .018752 | .057097 | -.058060 | .053755 | .032671 |
| 9 | -.076179 | .020143 | .050090 | -.066163 | .064852 | .034777 |
| 10 | -.079192 | .013289 | .047557 | -.070674 | .071170 | .040828 |
| 11 | -.060416 | .001752 | .050586 | -.061549 | .066981 | .046411 |
| 12 | -.034400 | -.009334 | .060336 | -.044947 | .058811 | .047183 |
| 13 | -.014254 | -.020625 | .076249 | -.041368 | .048272 | .037139 |
| 14 | -.006516 | -.025937 | .084605 | -.036879 | .035996 | .032643 |
| 15 | -.007552 | -.018628 | .081765 | -.023429 | .029142 | .021211 |
| 16 | .004041 | -.016615 | .075259 | -.013936 | .032070 | .010894 |
| 17 | .012669 | -.025364 | .060852 | -.023266 | .038842 | .010080 |
| 18 | .009669 | -.026732 | .041072 | -.031809 | .040079 | .007674 |
| 19 | -.001278 | -.017784 | .024286 | -.030017 | .032064 | .002316 |
| 20 | -.017661 | -.000796 | .013559 | -.019613 | .022669 | -.002105 |
| 21 | -.025463 | .009126 | .005858 | -.014944 | .008023 | .001683 |
| 22 | -.010977 | -.003221 | .007336 | -.006120 | -.007336 | .009281 |
| 23 | .009329 | -.014355 | .012686 | -.003158 | -.015660 | .009682 |
| 24 | .025899 | -.013801 | .013640 | .003404 | -.021457 | -.004950 |
| 25 | .035079 | .002418 | .011910 | .022945 | -.028263 | -.020792 |
| 26 | .035881 | .007875 | .007745 | .036323 | -.032729 | -.037794 |
| 27 | .043777 | .004398 | .003322 | .047437 | -.041858 | .043607 |
| 28 | .054025 | -.003836 | -.001123 | .064434 | -.054386 | -.037640 |
| 29 | .065257 | -.003676 | -.006371 | .065101 | -.067182 | -.028235 |
| 30 | .079776 | .000885 | -.015250 | .068545 | -.079004 | -.017322 |
| 31 | .081644 | .010284 | -.025430 | .069437 | -.081303 | -.012843 |
| 32 | -.076139 | .018870 | -.036052 | .068109 | -.080628 | -.021801 |
| 33 | .080351 | .018294 | -.040777 | .060603 | -.082238 | -.028599 |
| 34 | .068664 | .024074 | -.042003 | .044665 | -.080046 | -.029407 |
| 35 | .041098 | .028958 | -.043640 | .023557 | -.064548 | -.023278 |
| 36 | .018453 | .025407 | -.039190 | .012405 | -.048143 | -.017448 |
| 37 | .013454 | .014212 | -.032876 | .025402 | -.037946 | -.015139 |
| 38 | .008272 | .000980 | -.029648 | .021210 | -.021649 | -.011759 |
| 39 | -.004434 | .008752 | -.032199 | .012145 | -.009506 | -.011924 |
| 40 | -.027466 | .017210 | -.035626 | -.006809 | .008769 | -.006973 |
| 41 | -.039475 | .021766 | -.035350 | -.021271 | .022466 | .003431 |
| 42 | -.028072 | .012680 | -.030379 | -.026982 | .031620 | .008646 |
| 43 | -.017239 | -.007954 | -.019419 | -.040853 | .038855 | .013508 |
| 44 | -.020915 | -.021441 | -.008961 | -.039903 | .046708 | .011812 |
| 45 | -.033968 | -.026205 | -.006383 | -.030814 | .051263 | .010428 |
| 46 | -.037584 | -.025528 | -.8124 | -.019041 | .050592 | .010686 |
| 47 | -.027820 | -.020360 | -.010957 | -.013379 | .047883 | .005743 |
| 48 | -.027569 | -.014277 | -.013848 | -.009515 | .035823 | .002441 |
| 49 | -.037625 | -.012268 | -.022626 | -.012676 | .020648 | .012140 |
| 50 | -.041077 | -.004635 | -.029053 | -.010488 | .012557 | .015558 |
| 51 | -.037319 | .003653 | -.029017 | -.001935 | .011851 | .014114 |
| 52 | -.035106 | .009831 | -.024238 | .004858 | .009331 | .000649 |
| 53 | -.041721 | .014120 | -.013786 | .006976 | .006423 | -.008771 |
| 54 | -.045482 | .007549 | -.006566 | .005174 | .007277 | .000031 |
| 55 | -.040013 | -.012255 | .002303 | -.010746 | .014323 | .010323 |
| 56 | -.023434 | -.022172 | .012808 | -.025300 | .015751 | .014115 |
| 57 | -.013688 | -.016037 | .022950 | -.030985 | .009203 | .014416 |
| 58 | -.007660 | -.012812 | .029471 | -.019436 | .015638 | .017158 |
| 59 | -.005534 | -.008966 | .034255 | -.019235 | .029858 | .013058 |
| 60 | -.011995 | -.006573 | .033069 | -.028815 | .033391 | .005191 |

RUN NC 91B 46W 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.79173 10E-01 | 0.62742 10E-01 | 0.20595 10E-01 | 0.61526 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .760638 | .605327 | .513880 | .866085 |
| 2 | .483119 | .233422 | .133197 | .684893 |
| 3 | .299993 | .083792 | -.007330 | .532920 |
| 4 | .180050 | .052726 | -.042657 | .408818 |
| 5 | .096160 | .026296 | -.040600 | .310209 |
| 6 | .046871 | -.011160 | -.033499 | .244598 |
| 7 | .014376 | -.041666 | -.027065 | .195204 |
| 8 | -.012192 | -.047864 | -.035165 | .146617 |
| 9 | -.038075 | -.040212 | -.043141 | .096933 |
| 10 | -.045432 | -.058125 | -.035546 | .044497 |
| 11 | -.046413 | -.071994 | -.035926 | -.012380 |
| 12 | -.053966 | -.070940 | -.047250 | -.070327 |
| 13 | -.064045 | -.062379 | -.073878 | -.125016 |
| 14 | -.078945 | -.060549 | -.082196 | -.171674 |
| 15 | -.100583 | -.067565 | -.088509 | -.211364 |
| 16 | -.137940 | -.080629 | -.086518 | -.244352 |
| 17 | -.172686 | -.115436 | -.077862 | -.272647 |
| 18 | -.180902 | -.115382 | -.067245 | -.285651 |
| 19 | -.180174 | -.076546 | -.073686 | -.295003 |
| 20 | -.180735 | -.079616 | -.068754 | -.307706 |
| 21 | -.175943 | -.111436 | -.057180 | -.322387 |
| 22 | -.178682 | -.106453 | -.047436 | -.332968 |
| 23 | -.179659 | -.098514 | -.063744 | -.338578 |
| 24 | -.175654 | -.086793 | -.055839 | -.341578 |
| 25 | -.175746 | -.097461 | -.051343 | -.333005 |
| 26 | -.174455 | -.097050 | -.060197 | -.314503 |
| 27 | -.164915 | -.074201 | -.055064 | -.282767 |
| 28 | -.150765 | -.052885 | -.049757 | -.246586 |
| 29 | -.140354 | -.050938 | -.054995 | -.210043 |
| 30 | -.115013 | -.032341 | -.018663 | -.175375 |
| 31 | -.086421 | .004209 | .002006 | -.138811 |
| 32 | -.063159 | .016187 | .015116 | -.106623 |
| 33 | -.044900 | .017032 | .023592 | -.079001 |
| 34 | -.026631 | .021454 | .033258 | -.049800 |
| 35 | -.010257 | .024140 | .037808 | -.029031 |
| 36 | .007476 | .008517 | .023830 | -.005682 |
| 37 | .025380 | -.018231 | .034554 | .018961 |
| 38 | .031258 | -.009645 | .050576 | .041128 |
| 39 | .039058 | -.028313 | .027672 | .056735 |
| 40 | .047102 | .044733 | .000928 | .073449 |
| 41 | .044655 | .045034 | -.001699 | .085120 |
| 42 | .038521 | .035230 | .020502 | .094857 |
| 43 | .043817 | .020545 | .008188 | .103130 |
| 44 | .049289 | -.006192 | .002493 | .105609 |
| 45 | .041685 | -.010943 | .001687 | .098958 |
| 46 | .027061 | -.001724 | -.004590 | .083899 |
| 47 | .011741 | -.015096 | -.003830 | .065584 |
| 48 | .011442 | -.010068 | .011129 | .053941 |
| 49 | .012535 | -.008832 | .013615 | .048439 |
| 50 | .017608 | -.013661 | .003820 | .047169 |
| 51 | .031463 | -.000989 | .002582 | .044161 |
| 52 | .044706 | .005858 | .008931 | .041847 |
| 53 | .048244 | .005038 | .021832 | .038557 |
| 54 | .036382 | .018028 | .008661 | .037443 |
| 55 | .020473 | .031582 | .013781 | .036150 |
| 56 | .014582 | .017812 | .054766 | .039577 |
| 57 | .009736 | -.000785 | .021168 | .040548 |
| 58 | .012327 | .013090 | .005357 | .039398 |
| 59 | .024506 | .017704 | .049930 | .037995 |
| 60 | .025011 | .011612 | .053811 | .028422 |

RUN NC 91B 46M 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|---------|----------|---------|----------|---------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 | 10E-03 |
| 0 | .003914 | -.003040 | .009884 | .007689 | .025569 | -.006861 |
| 1 | .086310 | -.067457 | .133253 | -.117740 | .418853 | -.214502 |
| 2 | .130879 | -.110121 | .190682 | -.129130 | .499921 | -.382703 |
| 3 | .111698 | -.131543 | .202063 | .013777 | .309208 | -.460290 |
| 4 | .044830 | -.084349 | .112999 | .070363 | .125481 | -.259800 |
| 5 | .073781 | -.059707 | .056754 | -.166524 | .220357 | -.155479 |
| 6 | .117682 | -.094130 | .056997 | -.408746 | .255903 | -.247203 |
| 7-8 | .090761 | -.102525 | .047894 | -.339935 | .283265 | -.218326 |
| 9-11 | .086027 | -.063582 | .033069 | -.300395 | .197308 | -.138545 |
| 12-15 | .045122 | -.063476 | .019875 | -.192503 | .131849 | -.140366 |
| 16-20 | .038766 | -.041636 | .012029 | -.296686 | .088701 | -.085539 |
| 21-27 | .024296 | -.029987 | .004452 | -.261913 | .059620 | -.046498 |
| 28-36 | .011662 | -.017081 | .001930 | -.162889 | .026787 | -.027134 |
| 37-47 | .005751 | -.010552 | .001096 | -.074029 | .010245 | -.010071 |
| 48-60 | .002389 | -.006208 | .000481 | -.032287 | .003793 | -.006296 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-03 | 10E-03 | 10F | 10E-0 | 10E-03 |
| 1 | .034098 | -.110217 | .484331 | -.021065 | .045940 | .038266 |
| 2 | -.074596 | -.207310 | .685310 | -.069594 | .380977 | .130411 |
| 3 | -.178381 | -.180636 | .635096 | -.109638 | .634733 | .199201 |
| 4 | -.091227 | .072521 | .318753 | -.060607 | .263366 | .115662 |
| 5 | -.008627 | .090546 | .194504 | -.014127 | -.025329 | .028117 |
| 6 | -.051123 | -.052810 | .183614 | -.035477 | .121182 | .021453 |
| 7-8 | -.016786 | -.111919 | .151083 | -.035856 | .084706 | .011419 |
| 9-11 | .031522 | -.263067 | .270705 | -.017199 | .051044 | -.000541 |
| 12-15 | -.032122 | -.048884 | .049480 | -.029607 | .105517 | .011934 |
| 16-20 | -.024227 | .002461 | .060033 | -.015012 | .041268 | -.012639 |
| 21-27 | -.001183 | -.073870 | .034897 | -.006280 | .031225 | -.007375 |
| 28-36 | -.000900 | -.013325 | .016715 | -.004998 | .025565 | -.013645 |
| 37-47 | -.000536 | .010286 | .009948 | -.001902 | .011276 | -.008918 |
| 48-60 | -.000952 | .005588 | .003921 | -.000914 | -.001544 | -.002195 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .037444 | .019860 | .002755 | .005559 |
| 1 | .579626 | .241282 | .044317 | .076977 |
| 2 | .876069 | .370611 | .081389 | .114295 |
| 3 | .976126 | .479607 | .117640 | .121727 |
| 4 | .630042 | .386750 | .101900 | .066458 |
| 5 | .415359 | .276358 | .076021 | .030775 |
| 6 | .431211 | .277705 | .077743 | .026435 |
| 7-8 | .403998 | .288000 | .074750 | .022367 |
| 9-11 | .336422 | .232145 | .077592 | .016290 |
| 12-15 | .186350 | .183249 | .071642 | .011955 |
| 16-20 | .145266 | .160962 | .060042 | .005921 |
| 21-27 | .083982 | .135866 | .046431 | .003144 |
| 28-36 | .056932 | .080349 | .033428 | .002147 |
| 37-47 | .033885 | .050621 | .022555 | .001296 |
| 48-60 | .021148 | .033450 | .016293 | .000826 |

RUN NO 91B 46M 6-18-63 2306-0010(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.32690 10E-01 | 0.12813 10E-01 | 0.13288 10E-01 | 0.11281 10E-01 | 0.11699 10E-01 | 0.45856 10E-02 |
| 0 | .240804 | -.317886 | .589755 | -.094069 | .292205 | -.237873 |
| 1 | .088474 | .000496 | .241054 | .035192 | .160568 | -.010336 |
| 2 | .054176 | .068538 | -.008338 | -.012503 | .073715 | .045516 |
| 3 | .032875 | .059169 | -.037336 | .032993 | .039574 | .061421 |
| 4 | .036711 | .008193 | -.037790 | .018284 | .008869 | -.000684 |
| 5 | -.001015 | .066398 | -.066231 | .010687 | .008710 | .017510 |
| 6 | .015791 | -.073770 | -.001139 | -.023524 | -.002546 | -.061060 |
| 7 | -.046361 | -.090383 | -.004097 | -.038349 | -.031892 | -.071347 |
| 8 | -.059394 | -.046842 | .001260 | .042168 | -.051432 | -.017027 |
| 9 | -.029757 | .049527 | -.007644 | .089593 | -.023358 | .071984 |
| 10 | -.018801 | .014628 | .004175 | .027338 | -.067860 | .026113 |
| 11 | -.041744 | -.005698 | .001760 | .041186 | -.071275 | -.030104 |
| 12 | -.044163 | .016330 | -.020576 | .045785 | -.062574 | .007723 |
| 13 | -.076016 | .057320 | -.053158 | .057544 | -.085007 | .078177 |
| 14 | -.079399 | .048464 | -.066215 | .024804 | -.079953 | .057538 |
| 15 | .000000 | .061433 | -.032931 | -.035187 | -.034494 | .046328 |
| 16 | -.055774 | -.002510 | -.104272 | -.036291 | -.050283 | .029713 |
| 17 | -.057641 | .003866 | -.090833 | .035398 | .003215 | .036961 |
| 18 | .039672 | .001372 | -.005869 | -.038037 | .090273 | .014147 |
| 19 | .030325 | -.039305 | -.043173 | .011842 | .036859 | -.063023 |
| 20 | -.000970 | -.071283 | -.020827 | -.035659 | .012936 | -.068843 |
| 21 | -.014307 | -.033090 | .014526 | -.052030 | .021271 | -.003093 |
| 22 | -.040003 | .025878 | .042397 | -.054058 | .035469 | -.032986 |
| 23 | .016498 | .037830 | .042118 | -.040003 | .030080 | -.079068 |
| 24 | .069617 | -.053609 | .065734 | -.059216 | .105324 | -.097625 |
| 25 | .051859 | .017537 | -.066587 | -.037835 | .053565 | -.036691 |
| 26 | .067452 | -.009531 | -.088184 | -.051724 | .008915 | .092787 |
| 27 | .074450 | .022834 | .013696 | -.004066 | .039639 | .028031 |
| 28 | .066923 | -.021205 | .077561 | -.072168 | .040298 | .009314 |
| 29 | .078272 | -.015936 | .084005 | .022851 | .003023 | -.003359 |
| 30 | .001001 | .020713 | .087531 | -.006359 | .017120 | .000576 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|---------|----------|---------|----------|---------|----------|
| | 10E-02 | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 |
| 0 | .006894 | -.012397 | .089000 | .052807 | .055278 | -.000580 |
| 1 | .070177 | -.085142 | .576750 | .155220 | .327847 | -.019276 |
| 2 | .106579 | -.113935 | .547252 | -.063286 | .474102 | -.054669 |
| 3 | .102699 | -.069233 | .436159 | -.151958 | .530575 | -.037532 |
| 4 | .049472 | .084838 | .346839 | -.019508 | .258565 | .037904 |
| 5 | .034654 | .042112 | .538106 | .067249 | .134225 | .009313 |
| 6 | .037379 | -.182173 | .621231 | .066604 | .200581 | -.044084 |
| 7 | .028918 | -.272204 | .520647 | -.020490 | .224444 | -.049568 |
| 8 | .007537 | -.280110 | .495465 | -.114172 | .127974 | -.064718 |
| 9-11 | .024640 | -.313561 | .431540 | -.102908 | .134517 | -.106377 |
| 12-14 | .029505 | -.068702 | .307812 | .040603 | .111982 | -.015622 |
| 15-21 | .025540 | -.265361 | .282479 | -.044309 | .073346 | -.061829 |
| 22-30 | .022603 | -.189923 | .126125 | -.126768 | .048599 | -.051870 |

RUN NO 91B 46M 6-18-63 2306-0010(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.32690 10E-01 | 0.12813 10E-01 | 0.13288 10E-01 | 0.11281 10E-01 | 0.11699 10E-01 | 0.45856 10E-02 |
| 1 | -.016658 | -.006227 | .114113 | -.126895 | .059145 | .055455 |
| 2 | .068806 | -.041663 | .103718 | -.021361 | .017728 | .014962 |
| 3 | .084706 | -.013335 | .055367 | .088582 | -.025213 | -.038673 |
| 4 | -.000402 | .007351 | .011202 | .027695 | .039169 | -.028087 |
| 5 | -.035962 | -.038732 | .025940 | .013818 | .059131 | .027525 |
| 6 | -.025839 | .026657 | .068721 | .042018 | .073467 | -.012520 |
| 7 | .041610 | .061705 | .029686 | .061304 | .018507 | -.056253 |
| 8 | .029024 | .064464 | .018753 | .043658 | -.021435 | -.088333 |
| 9 | .075617 | -.015366 | .024064 | .070794 | -.065679 | -.017022 |
| 10 | .044225 | -.036543 | -.017541 | -.012512 | -.038710 | .068505 |
| 11 | -.006326 | .006156 | -.033708 | -.116069 | -.021205 | .014534 |
| 12 | -.038567 | .004277 | -.03138 | -.096664 | -.005864 | -.025795 |
| 13 | -.029535 | .056461 | -.001102 | -.045442 | .000658 | -.057553 |
| 14 | .007741 | .028879 | .014858 | -.061299 | -.048829 | -.047977 |
| 15 | .011961 | .025390 | -.020478 | .043727 | -.034646 | -.010844 |
| 16 | -.025729 | -.005250 | -.018934 | -.022397 | -.024060 | .008855 |
| 17 | .017400 | .000978 | -.070367 | .012344 | -.039231 | -.003652 |
| 18 | -.079308 | .014058 | -.043796 | -.026245 | -.019717 | .045303 |
| 19 | -.025950 | .007194 | .001728 | .070520 | .021828 | .032222 |
| 20 | -.035797 | -.068261 | -.019366 | -.000991 | .031177 | .042571 |
| 21 | .022851 | -.043383 | -.006626 | .040586 | -.016049 | .043954 |
| 22 | -.014874 | .050958 | .011255 | -.000194 | .025061 | -.020865 |
| 23 | .031526 | -.020042 | .020185 | .050429 | -.021598 | -.020294 |
| 24 | .081448 | .031091 | .065462 | .071596 | -.009774 | -.043505 |
| 25 | .094555 | -.040214 | .048034 | .051481 | .006454 | .010943 |
| 26 | .045059 | -.042830 | .028425 | .067555 | -.007348 | -.011094 |
| 27 | .032282 | -.011279 | -.074019 | .017742 | -.046393 | .017927 |
| 28 | .007541 | .027961 | -.073432 | .018801 | -.004343 | .038799 |
| 29 | -.015298 | -.007920 | -.000492 | -.024082 | .050641 | .011564 |
| 30 | -.011957 | -.018019 | .037033 | -.007319 | .036776 | -.033428 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-04 |
| 1 | .212599 | .116808 | .064210 | -.001635 | -.087930 | -.490068 |
| 2 | .329076 | .067606 | .193685 | .049094 | .041095 | -.460754 |
| 3 | .377963 | -.028831 | .306113 | .224095 | .174022 | -.173701 |
| 4 | .011689 | -.063382 | .214391 | .179241 | .176282 | .119458 |
| 5 | -.005737 | -.041917 | .159857 | -.058065 | .083266 | -.051573 |
| 6 | .114175 | -.101280 | .145041 | -.217953 | .031472 | .134069 |
| 7 | .242343 | -.173625 | .063964 | -.179017 | -.045826 | .620157 |
| 8 | .617171 | -.098102 | .107432 | -.010905 | -.146268 | .332738 |
| 9-11 | .215443 | .086774 | .210390 | -.056950 | .010329 | -.276566 |
| 12-14 | -.229288 | -.081896 | .142575 | -.201337 | .123396 | .804994 |
| 15-21 | -.240276 | .030870 | .016682 | -.128769 | .066178 | .148330 |
| 22-30 | .014377 | .005721 | .023713 | .014673 | -.025387 | .002078 |

RUN NC 918 46M 6-18-63 2306-0010(EST)
 301 PCINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.37130 10E-01 | 0.28781 10E-01 | 0.44217 10E-02 | 0.47556 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .284350 | .380440 | -.030940 | .449099 |
| 2 | -.067950 | .264399 | -.087015 | .032159 |
| 3 | -.012933 | .224377 | -.032000 | -.071286 |
| 4 | -.002488 | .167947 | -.046954 | -.068847 |
| 5 | -.065072 | .047673 | -.050536 | -.064666 |
| 6 | .019586 | .066212 | -.025027 | -.079583 |
| 7 | .034452 | -.039347 | -.069722 | -.116749 |
| 8 | -.001953 | -.145541 | -.012745 | -.111938 |
| 9 | -.001059 | .145354 | -.069471 | -.080861 |
| 10 | -.009856 | -.221993 | .057987 | -.060239 |
| 11 | -.069749 | -.259204 | .021151 | -.062607 |
| 12 | -.066142 | -.260993 | -.054242 | -.062461 |
| 13 | -.116364 | -.248891 | -.061331 | -.061823 |
| 14 | -.037604 | -.241512 | -.068548 | -.083229 |
| 15 | .014964 | -.172887 | -.044492 | -.091027 |
| 16 | -.083077 | -.065272 | .017847 | -.131306 |
| 17 | -.103701 | -.026761 | -.019961 | -.054163 |
| 18 | -.026829 | .063154 | .051948 | .087003 |
| 19 | -.086349 | .028815 | -.055557 | .043887 |
| 20 | .011761 | .031601 | .077756 | .016132 |
| 21 | .050213 | .125945 | .109099 | .006071 |
| 22 | .016082 | .158478 | -.058225 | .089299 |
| 23 | .045683 | .086949 | -.035306 | .123460 |
| 24 | .071265 | .053892 | .000195 | .138501 |
| 25 | -.036116 | .116050 | -.050711 | -.019555 |
| 26 | -.106788 | .051801 | -.017865 | -.137915 |
| 27 | -.071442 | -.006248 | .042011 | -.056369 |
| 28 | -.011437 | .044310 | .028341 | .005692 |
| 29 | .078824 | .031160 | -.037980 | .038612 |
| 30 | .107988 | -.020879 | -.137833 | .120161 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .033907 | .051929 | .009372 | .031253 |
| 1 | .210492 | .340389 | .081060 | .242709 |
| 2 | .203126 | .419539 | .113762 | .343466 |
| 3 | .178682 | .414606 | .149797 | .417696 |
| 4 | .134855 | .174321 | .134194 | .338362 |
| 5 | .172615 | .056414 | .149986 | .347178 |
| 6 | .209673 | .081335 | .202616 | .356481 |
| 7 | .233259 | .101917 | .181466 | .284669 |
| 8 | .264651 | .089448 | .135910 | .241013 |
| 9-11 | .200959 | .083745 | .173615 | .264102 |
| 12-14 | .168238 | .073862 | .187451 | .220475 |
| 15-21 | .149084 | .092866 | .222465 | .126722 |
| 22-30 | .099600 | .090130 | .271405 | .081315 |

RUN NO 91B 91M 6-18-63 2306-0010(EST)

GROSS STATISTICS

| | | |
|-----------------|------------------------|------------------|
| CLEAR STABLE | WIND SPEED 9.09 M/SEC | SIGMA A 1.60 DEG |
| | WIND DIRECTION 255 DEG | SIGMA E .36 DBE |
| | SOLAR RAD. 0 LY/MIN | |

| | | | | |
|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|
| WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN | 10 PT BLOCK AVG |
|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.14873E-00 | 0.14211E-01 | 0.82727E-02 | 0.94085E-02 |
| V | 0.60809E-01 | 0.15621E-01 | 0.71383E-02 | 0.11594E-01 |
| W | 0.31084E-02 | 0.27529E-02 | 0.20550E-02 | 0.15405E-02 |
| T | 0.20837E-01 | 0.58039E-02 | 0.22820E-02 | 0.48780E-02 |
| E | 0.10633E-00 | 0.16296E-01 | 0.87331E-02 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.04243 | 0.01311 | 0.01001 | 0.01067 |
| V | 0.02713 | 0.01375 | 0.00929 | 0.01185 |
| W | 0.00613 | 0.00577 | 0.00499 | 0.00432 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.16466E-01 | 0.45145E-02 | 0.17212E-02 | 0.39063E-02 |
| U,W | -0.15072E-02 | -0.90407E-03 | -0.70750E-03 | -0.35667E-03 |
| U,T | 0.10628E-01 | 0.44886E-02 | 0.20411E-02 | 0.35517E-02 |
| V,W | 0.86053E-03 | -0.98193E-03 | -0.30180E-03 | -0.65853E-03 |
| V,T | 0.90917E-02 | 0.50539E-02 | 0.17970E-02 | 0.44514E-02 |
| W,T | -0.44882E-03 | 0.48817E-04 | -0.21054E-03 | 0.23088E-03 |
| ME | -0.20845E-03 | 0.29141E-04 | 0.93244E-05 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.17314 | 0.30300 | 0.22398 | 0.37402 |
| U,W | -0.07010 | -0.14454 | -0.17159 | -0.09368 |
| U,T | 0.19091 | 0.49424 | 0.46976 | 0.52427 |
| V,W | 0.06259 | -0.14974 | -0.07880 | -0.15582 |
| V,T | 0.25541 | 0.53078 | 0.44524 | 0.59193 |
| W,T | -0.05577 | 0.01221 | -0.09722 | 0.08422 |

RUN NO 91B 91M 6-18-63 2306-0010(FEST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.76858 10E-02 | 0.41246 10E-02 | 0.43458 10E-02 | 0.38313 10E-02 | 0.40367 10E-02 | 0.21663 10E-02 |
| 0 | .224535 | -.171615 | .469774 | -.078545 | .445012 | -.097312 |
| 1 | .182532 | -.088803 | .401913 | -.025795 | .396458 | -.049669 |
| 2 | .147375 | -.035896 | .302806 | -.008854 | .338836 | -.016580 |
| 3 | .125401 | -.024518 | .232221 | -.017155 | .298083 | -.005103 |
| 4 | .109233 | -.005217 | .193139 | .000863 | .261616 | -.002990 |
| 5 | .106690 | .004694 | .163648 | .003498 | .217722 | -.007562 |
| 6 | .090777 | .002142 | .135825 | -.009365 | .175740 | -.013901 |
| 7 | .064870 | .006347 | .104784 | -.014767 | .136594 | -.014017 |
| 8 | .028905 | .011057 | .071884 | -.018561 | .096931 | -.007345 |
| 9 | -.005732 | .028711 | .037209 | -.014990 | .057338 | -.002642 |
| 10 | -.015270 | .036387 | .014209 | -.021444 | .029220 | -.005197 |
| 11 | -.011712 | .021547 | -.005722 | -.018823 | .001488 | -.004323 |
| 12 | -.01567 | -.014774 | -.023055 | -.017739 | -.014094 | -.006771 |
| 13 | -.018851 | .039461 | -.040969 | -.009654 | -.029625 | .000593 |
| 14 | -.022397 | .033506 | -.059109 | -.004043 | -.043554 | .004129 |
| 15 | -.043405 | .032066 | -.081949 | -.004907 | -.047724 | -.003645 |
| 16 | -.060221 | .014603 | -.094702 | -.017612 | -.050131 | -.019832 |
| 17 | -.077367 | -.010156 | -.100577 | -.019867 | -.056522 | -.028280 |
| 18 | -.079240 | -.011414 | -.104890 | -.014387 | -.075833 | -.027086 |
| 19 | -.070215 | -.001225 | -.114705 | -.025338 | -.096853 | -.014771 |
| 20 | -.075938 | .011051 | -.125634 | -.022576 | -.128215 | -.003661 |
| 21 | -.089993 | .022729 | -.135267 | -.003310 | -.151159 | .004626 |
| 22 | -.084993 | .011894 | -.139090 | -.013240 | -.161438 | .003611 |
| 23 | -.076823 | -.003080 | -.137328 | -.019027 | -.170039 | -.004863 |
| 24 | -.077793 | -.010976 | -.133661 | -.027587 | -.172237 | -.013814 |
| 25 | -.081520 | -.005208 | -.144183 | -.014097 | -.171938 | -.008504 |
| 26 | -.082716 | .010289 | -.152046 | -.002802 | -.168284 | .003126 |
| 27 | -.078346 | .000785 | -.142813 | -.002720 | -.162245 | .004613 |
| 28 | -.083807 | -.004854 | -.132876 | -.030345 | -.154554 | .009953 |
| 29 | -.080420 | -.006708 | -.123176 | -.032529 | -.139780 | .021458 |
| 30 | -.060432 | -.019628 | -.110087 | .032438 | -.128271 | .028377 |
| 31 | -.043615 | -.036784 | -.086640 | .041017 | -.108143 | .032893 |
| 32 | -.029075 | -.029665 | -.078911 | .038355 | -.085334 | .036824 |
| 33 | -.019561 | -.015189 | -.070300 | .043437 | -.071983 | .041135 |
| 34 | .007573 | -.013546 | -.055846 | .040769 | -.048978 | .038995 |
| 35 | .005350 | -.010207 | -.048453 | .034664 | -.033220 | .038792 |
| 36 | -.000759 | -.011970 | -.038088 | .029379 | -.028010 | .034456 |
| 37 | .017916 | -.026378 | -.022776 | .015591 | -.020310 | .032124 |
| 38 | .040547 | -.041026 | .003751 | .000691 | -.007549 | .023731 |
| 39 | .045537 | -.034581 | .023567 | -.003961 | -.000176 | .016444 |
| 40 | .043195 | -.020913 | .036555 | -.006066 | .002252 | .009284 |
| 41 | .047340 | -.012633 | .047927 | -.023031 | .008794 | .001692 |
| 42 | .058990 | -.011023 | .059272 | -.037719 | .008271 | -.005559 |
| 43 | .064363 | -.001512 | .061283 | -.032170 | .007606 | .001196 |
| 44 | .065744 | .025565 | .056410 | -.017614 | .019536 | .011948 |
| 45 | .062062 | .042553 | .044997 | .001051 | .026124 | .024824 |
| 46 | .056267 | .028006 | .039859 | .012181 | .028526 | .025853 |
| 47 | .047742 | .021933 | .034307 | .032326 | .033941 | .021064 |
| 48 | .037944 | .028959 | .029437 | .040871 | .042151 | .018129 |
| 49 | .039498 | .038479 | .027686 | .041768 | .048506 | .021603 |
| 50 | .041786 | .040930 | .029807 | .023397 | .054154 | .024076 |
| 51 | .039447 | .046489 | .037056 | .007067 | .054057 | .030315 |
| 52 | .035332 | .053958 | .040216 | .004223 | .047758 | .038908 |
| 53 | .036161 | .056142 | .032798 | .014756 | .030092 | .043750 |
| 54 | .021577 | .046812 | .019697 | .014863 | .009631 | .039401 |
| 55 | -.005039 | .040944 | .007117 | .024044 | -.009086 | .035767 |
| 56 | -.013043 | .024074 | .000370 | .026613 | -.023989 | .024809 |
| 57 | -.000573 | .012085 | -.002605 | .018745 | -.026989 | .007554 |
| 58 | .004571 | .010606 | -.000439 | .015513 | -.027263 | -.007473 |
| 59 | .016697 | -.008269 | -.002911 | .001664 | -.034662 | -.023734 |
| 60 | .026111 | -.020458 | -.000381 | -.005071 | -.035042 | -.038256 |

RUN NO 91B 91M 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.76858 10E-02 | 0.41246 10E-02 | 0.43458 10E-02 | 0.38313 10E-02 | 0.40367 10E-02 | 0.21663 10E-02 |
| 1 | -.006767 | .004968 | .036746 | .008562 | .010371 | .039089 |
| 2 | -.011215 | .015217 | .053468 | .006973 | .016732 | .072273 |
| 3 | -.012999 | .018839 | .069390 | -.016137 | .025883 | .087207 |
| 4 | .005045 | .025867 | .077203 | .000202 | .035231 | .085674 |
| 5 | .017758 | .022879 | .084500 | .011317 | .044084 | .093876 |
| 6 | .028354 | .038566 | .084632 | .008279 | .040022 | .113234 |
| 7 | .039273 | .037485 | .083972 | .008627 | .036336 | .122107 |
| 8 | .046796 | .020046 | .083676 | .005413 | .033468 | .129212 |
| 9 | .049536 | .016599 | .072489 | .000440 | .021727 | .130861 |
| 10 | .051876 | .025327 | .064616 | -.001947 | .017048 | .129127 |
| 11 | .051203 | .034832 | .059274 | .010950 | .017145 | .123514 |
| 12 | .055693 | .031152 | .057656 | .018113 | .015118 | .113205 |
| 13 | .065601 | .016014 | .057050 | .016796 | .014646 | .109675 |
| 14 | .053806 | .011485 | .053488 | .012830 | .018608 | .109930 |
| 15 | .049974 | .001352 | .049829 | .020173 | .015009 | .112236 |
| 16 | .044151 | -.009861 | .046525 | .022015 | .010257 | .112174 |
| 17 | .041683 | -.021842 | .041809 | .023151 | .003633 | .112000 |
| 18 | .036972 | -.041562 | .041193 | .020855 | .004525 | .108950 |
| 19 | .026629 | -.047860 | .037619 | .002535 | .012686 | .102755 |
| 20 | .026705 | -.051544 | .029905 | -.018944 | .022670 | .090212 |
| 21 | .019123 | -.039310 | .030929 | -.017513 | .026588 | .068067 |
| 22 | .026440 | -.035829 | .041557 | -.016689 | .023731 | .049383 |
| 23 | .028541 | -.042670 | .051677 | -.024434 | .022794 | .042873 |
| 24 | .023672 | -.050614 | .050245 | -.030358 | .025226 | .037635 |
| 25 | .006184 | -.060757 | .037458 | -.024595 | .016747 | .029369 |
| 26 | .003558 | -.053997 | .027541 | -.011261 | .002379 | .010085 |
| 27 | .013102 | -.041247 | .031008 | .015893 | -.005415 | -.023313 |
| 28 | .009598 | -.037309 | .029483 | .017121 | -.007590 | -.039842 |
| 29 | -.015749 | -.026314 | .026331 | .000360 | .003420 | -.050415 |
| 30 | -.027777 | -.031278 | .023884 | -.007821 | .014133 | -.048838 |
| 31 | -.035424 | -.032848 | .017331 | -.002456 | .026589 | -.053422 |
| 32 | -.032740 | -.043712 | .010305 | -.009195 | .027590 | -.055237 |
| 33 | -.027114 | -.060334 | .000902 | -.006794 | .020424 | -.052455 |
| 34 | -.015155 | -.056088 | -.002950 | .007357 | .014937 | -.052069 |
| 35 | -.000946 | -.043388 | -.002272 | .012863 | .008648 | -.064393 |
| 36 | -.003471 | -.015697 | -.008662 | .010096 | .005991 | .067181 |
| 37 | -.005939 | .009264 | -.013639 | .006965 | .008744 | -.070748 |
| 38 | -.006969 | .022092 | -.019618 | -.000785 | .010691 | -.075591 |
| 39 | -.010021 | .022409 | -.028182 | -.011379 | .013495 | -.073705 |
| 40 | -.004534 | .020012 | -.027674 | -.006891 | .008949 | -.071943 |
| 41 | -.004391 | .017876 | -.022209 | -.004267 | .002366 | -.068090 |
| 42 | -.002048 | .014144 | -.022881 | -.010990 | .008199 | -.062694 |
| 43 | -.004819 | .039571 | -.029066 | -.012065 | .007443 | -.062113 |
| 44 | -.007316 | .051008 | -.027415 | -.013337 | .005754 | -.065700 |
| 45 | -.001756 | .061166 | -.029016 | -.014747 | .012834 | -.062684 |
| 46 | .002548 | .058733 | -.025681 | -.016828 | .022705 | -.052678 |
| 47 | .007065 | .035463 | -.025446 | -.017980 | .019471 | -.033957 |
| 48 | .003852 | .023664 | -.026465 | -.019098 | .013601 | -.014061 |
| 49 | .001835 | .019451 | -.023454 | -.019097 | .010984 | -.001281 |
| 50 | .010690 | .010926 | -.019640 | -.007384 | .004346 | .011204 |
| 51 | .012365 | .019342 | -.019376 | -.008398 | -.005884 | .021291 |
| 52 | .016172 | .023476 | -.012061 | -.005275 | -.013260 | .016914 |
| 53 | .025203 | .022771 | -.007512 | .003435 | -.016355 | .011985 |
| 54 | .028698 | .022874 | -.011915 | .012114 | -.021298 | .012930 |
| 55 | .039632 | .026892 | -.011103 | .016549 | -.026562 | .013594 |
| 56 | .036211 | .039125 | -.005851 | .017047 | -.030470 | .015941 |
| 57 | .027512 | .036776 | .001105 | .020627 | -.031853 | .014509 |
| 58 | .025958 | .027709 | .003572 | .011708 | -.027789 | .010270 |
| 59 | .025679 | .024170 | -.001150 | .025875 | -.024220 | .008727 |
| 60 | .013238 | .028962 | .000117 | .031489 | -.012042 | .008375 |

RUN NO 91B 91M 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.82742 10E-02 | 0.71393 10E-02 | 0.20560 10E-02 | 0.22825 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .705950 | .748234 | .666973 | .862985 |
| 2 | .480946 | .526656 | .440590 | .704110 |
| 3 | .343172 | .413064 | .351090 | .590570 |
| 4 | .266620 | .326142 | .259816 | .499876 |
| 5 | .215375 | .244879 | .206998 | .423407 |
| 6 | .163731 | .182868 | .178083 | .346969 |
| 7 | .113009 | .134846 | .133701 | .270068 |
| 8 | .070375 | .096967 | .097165 | .200713 |
| 9 | .013236 | .074888 | .043152 | .138763 |
| 10 | -.017839 | .029516 | -.003802 | .085949 |
| 11 | -.033695 | -.014439 | -.038431 | .035980 |
| 12 | -.055980 | -.037136 | -.069435 | -.008463 |
| 13 | -.084098 | -.056667 | -.104317 | -.045630 |
| 14 | -.096935 | -.087350 | -.109891 | -.081809 |
| 15 | -.122328 | -.099791 | -.120140 | -.108948 |
| 16 | -.145815 | -.093111 | -.132864 | -.132317 |
| 17 | -.150049 | -.117822 | -.162150 | -.153094 |
| 18 | -.164543 | -.158704 | -.195228 | -.182912 |
| 19 | -.172564 | -.181867 | -.197190 | -.219809 |
| 20 | -.204301 | -.201861 | -.219593 | -.254810 |
| 21 | -.234353 | -.219985 | -.248505 | -.275171 |
| 22 | -.244599 | -.224042 | -.236503 | -.283201 |
| 23 | -.245897 | -.240504 | -.225437 | -.289320 |
| 24 | -.247832 | -.250686 | -.213611 | -.302192 |
| 25 | -.236244 | -.250598 | -.223348 | -.322189 |
| 26 | -.223323 | -.232762 | -.234195 | -.336320 |
| 27 | -.201956 | -.246372 | -.202357 | -.333920 |
| 28 | -.175505 | -.256241 | -.175065 | -.325304 |
| 29 | -.153348 | -.218964 | -.161698 | -.309455 |
| 30 | -.125583 | -.189316 | -.131598 | -.283921 |
| 31 | -.086623 | -.154911 | -.120394 | -.251565 |
| 32 | -.056735 | -.126721 | -.084187 | -.222969 |
| 33 | -.040641 | -.110602 | -.066602 | -.196710 |
| 34 | -.031704 | -.077138 | -.026898 | -.170882 |
| 35 | -.028534 | -.067052 | -.000722 | -.151958 |
| 36 | -.024956 | -.058245 | .011255 | -.133755 |
| 37 | -.000567 | -.031247 | .027867 | -.115728 |
| 38 | .031503 | -.011783 | .060305 | -.093987 |
| 39 | .040465 | -.009858 | .065940 | -.068459 |
| 40 | .040937 | .009328 | .063414 | -.039485 |
| 41 | .040916 | .042782 | .085797 | -.006944 |
| 42 | .064767 | .060025 | .114195 | .019237 |
| 43 | .074065 | .061852 | .110158 | .026370 |
| 44 | .071068 | .072580 | .098026 | .027390 |
| 45 | .069420 | .098881 | .072787 | .026116 |
| 46 | .058278 | .113928 | .068224 | .026693 |
| 47 | .059522 | .119243 | .064642 | .036701 |
| 48 | .060142 | .119399 | .062087 | .047741 |
| 49 | .049810 | .106027 | .048729 | .057314 |
| 50 | .040681 | .109394 | .039876 | .070804 |
| 51 | .040426 | .105288 | .031089 | .074667 |
| 52 | .049460 | .090506 | .008427 | .072431 |
| 53 | .046749 | .080951 | .015585 | .061058 |
| 54 | .027782 | .076723 | .011972 | .049977 |
| 55 | .008966 | .061762 | -.007417 | .047295 |
| 56 | -.003276 | .050027 | -.027349 | .046602 |
| 57 | -.002174 | .044440 | -.041662 | .047245 |
| 58 | -.014452 | .024027 | -.042764 | .042492 |
| 59 | -.017983 | -.003091 | -.026237 | .035092 |
| 60 | -.004249 | -.018109 | -.016468 | .037393 |

RUN NO 91B 91M 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|---------|----------|
| | 10E-03 | 10E-04 | 10E-03 | 10E-04 | 10E-03 | 10E-04 |
| 0 | .018585 | -.055629 | .025189 | -.128656 | .044251 | -.034507 |
| 1 | .202443 | -.135606 | .286240 | -.568502 | .359747 | -.316243 |
| 2 | .349538 | -.105574 | .386720 | -.269489 | .413754 | -.187626 |
| 3 | .387818 | -.475141 | .372160 | .062799 | .363388 | .001350 |
| 4 | .175752 | -.603956 | .185611 | .185835 | .166097 | .015921 |
| 5 | .080213 | -.411398 | .107982 | -.112384 | .083304 | -.115069 |
| 6 | .089115 | -.463959 | .103493 | -.240061 | .094422 | -.141483 |
| 7-8 | .052632 | -.335932 | .067950 | .062642 | .077207 | -.048288 |
| 9-11 | .025924 | -.145482 | .045455 | -.113500 | .012552 | -.034468 |
| 12-15 | -.004597 | -.244611 | .034092 | -.125293 | .017249 | -.089302 |
| 16-20 | .035244 | -.160605 | .029598 | -.050084 | .009741 | -.054387 |
| 21-27 | .012899 | -.091895 | .016043 | -.022692 | .008300 | -.042782 |
| 28-36 | .007417 | -.135152 | .008304 | -.072703 | .006847 | -.033442 |
| 37-47 | .007434 | -.098365 | .003111 | -.085975 | .003444 | -.026413 |
| 48-60 | .005204 | -.055169 | .002214 | -.036654 | .002229 | -.018103 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-03 | 10E-04 | 10E-03 | 10E-04 | 10E-04 | 10E-03 |
| 1 | .149083 | -.656220 | .154910 | .017195 | .658567 | .089689 |
| 2 | .153374 | -.104910 | .135253 | .120509 | .371538 | .124845 |
| 3 | .126717 | .692279 | .087904 | .155535 | .268275 | .103894 |
| 4 | .029474 | .649704 | .054905 | .143338 | .252698 | .032776 |
| 5 | -.021789 | .203762 | .060246 | -.002450 | .223669 | .010632 |
| 6 | -.019756 | .111796 | .049053 | -.187281 | .222749 | .012741 |
| 7-8 | -.029809 | -.099238 | .024166 | -.060590 | .191097 | .015824 |
| 9-11 | -.018228 | .059363 | .013483 | .084501 | .005980 | .002162 |
| 12-15 | -.015979 | -.008931 | .001667 | -.040272 | -.024930 | .003454 |
| 16-20 | -.006243 | -.023686 | .003788 | -.026686 | -.000859 | .004653 |
| 21-27 | .000668 | .039145 | .002574 | .054716 | .000171 | .001630 |
| 28-36 | .003454 | -.033865 | .002083 | .058045 | .012276 | -.001493 |
| 37-47 | -.000797 | .016238 | .000790 | -.028546 | -.004446 | -.000109 |
| 48-60 | -.001286 | -.023449 | .001078 | -.017644 | .004541 | -.000005 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .007195 | .009743 | .017462 | .047590 |
| 1 | .078180 | .087268 | ..310 | .438458 |
| 2 | .110139 | .110547 | .270945 | .492291 |
| 3 | .116306 | .1C2316 | .293246 | .405564 |
| 4 | .066210 | .051201 | .159799 | .191773 |
| 5 | .036655 | .033211 | .085265 | .117278 |
| 6 | .036485 | .034572 | .086213 | .112254 |
| 7-8 | .035580 | .030040 | .070831 | .078591 |
| 9-11 | .020312 | .018134 | .047571 | .040434 |
| 12-15 | .017053 | .014373 | .043714 | .028587 |
| 16-20 | .014325 | .008731 | .034132 | .019650 |
| 21-27 | .009790 | .007584 | .024542 | .014899 |
| 28-36 | .007020 | .005920 | .021743 | .008483 |
| 37-47 | .005329 | .004266 | .019422 | .005979 |
| 48-60 | .004542 | .002672 | .011548 | .003572 |

RUN NC 91B 91M 6-18-65 2306-0010(EST)
 301 PCINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.10446 10E-01 | 0.38092 10E-02 | 0.67773 10E-02 | 0.42272 10E-02 | 0.75211 10E-02 | 0.27426 10E-02 |
| 0 | .373959 | -.093634 | .524065 | -.155783 | .591855 | .084183 |
| 1 | .267536 | -.044669 | .369192 | -.167003 | .445817 | .086430 |
| 2 | .202667 | -.022169 | .272805 | -.138797 | .307112 | .088573 |
| 3 | .173359 | -.014780 | .208789 | -.069997 | .222032 | .104860 |
| 4 | .138351 | .003600 | .187406 | -.051685 | .148151 | .066224 |
| 5 | .102761 | .075062 | .136350 | -.009434 | .093988 | .045978 |
| 6 | .024344 | .034202 | .090657 | .031036 | .023704 | -.018639 |
| 7 | -.044733 | .040219 | .049932 | .056932 | -.029804 | -.062894 |
| 8 | -.068174 | .064680 | .046093 | .071594 | -.053114 | -.083802 |
| 9 | -.098467 | .047557 | -.007394 | .101547 | -.101782 | -.102476 |
| 10 | -.119073 | .048453 | -.033839 | .158180 | -.174907 | -.085054 |
| 11 | -.158734 | .051914 | -.106123 | .172975 | -.238484 | -.051469 |
| 12 | -.183495 | .078875 | -.136914 | .131603 | -.241067 | -.031519 |
| 13 | -.157437 | .057597 | -.145291 | .070139 | -.219122 | -.025450 |
| 14 | -.186261 | .064913 | -.171346 | .054153 | -.246465 | -.009308 |
| 15 | -.164807 | .022246 | -.148666 | .038137 | -.256301 | .006316 |
| 16 | -.136105 | .050454 | -.124634 | .073243 | -.221807 | .043197 |
| 17 | -.097388 | -.001195 | -.125250 | .034167 | -.176686 | .021876 |
| 18 | -.031672 | -.038289 | -.078278 | .037314 | -.138838 | .026905 |
| 19 | -.016528 | -.049399 | -.094605 | .084880 | -.125544 | .074006 |
| 20 | .008375 | -.038983 | -.067200 | .047369 | -.116274 | .081447 |
| 21 | .038569 | -.088648 | -.023746 | -.027051 | -.035885 | .037450 |
| 22 | .043447 | -.104368 | .006617 | -.065959 | .062936 | .032066 |
| 23 | .042932 | -.065506 | -.025155 | -.069247 | .122970 | .038313 |
| 24 | .060827 | -.051055 | -.030644 | -.075689 | .137715 | .031826 |
| 25 | .032176 | -.092227 | -.084177 | -.063742 | .138181 | -.019803 |
| 26 | -.000712 | -.077899 | -.095635 | -.086889 | .107777 | -.035614 |
| 27 | -.016173 | -.076611 | -.058692 | -.087211 | .068802 | -.089659 |
| 28 | -.023874 | -.070243 | -.016871 | -.109414 | .034713 | -.107709 |
| 29 | -.028741 | -.014057 | -.020414 | -.110100 | -.004052 | -.108380 |
| 30 | -.027014 | .029157 | -.020112 | -.137663 | .009505 | -.079601 |

COSPECTRUM

| K | U,V | U,W | U,T | V,H | V,T | W,T |
|-------|----------|----------|---------|----------|---------|----------|
| | 10E-02 | 10E-03 | 10E-02 | 10E-03 | 10E-02 | 10E-03 |
| 0 | .007408 | .029695 | .020858 | .025300 | .006812 | .014405 |
| 1 | .086755 | .068007 | .106953 | -.089646 | .096491 | .049833 |
| 2 | .106489 | -.063606 | .079929 | -.242184 | .115278 | .072721 |
| 3 | .086233 | -.110744 | .048501 | -.244047 | .082652 | .120010 |
| 4 | .025810 | -.040107 | .014789 | -.124771 | .028392 | .073892 |
| 5 | .007640 | -.027053 | .009467 | -.043323 | .020720 | .008294 |
| 6 | .011291 | -.042709 | .014968 | .017816 | .018155 | -.020378 |
| 7 | .005958 | -.028413 | .013984 | -.006331 | .018000 | -.035449 |
| 8 | .001974 | -.011020 | .011196 | -.054327 | .016957 | -.028137 |
| 9-11 | -.006074 | -.000709 | .006312 | -.001040 | .008675 | -.004826 |
| 12-14 | .010814 | -.000287 | .007974 | -.008187 | .009261 | -.001954 |
| 15-21 | .003937 | -.019070 | .004009 | .012750 | .003949 | .001953 |
| 22-30 | .005007 | -.002134 | .004579 | .003984 | .003495 | .000497 |

RUN NO 91B 91M 6-18-63 2306-0010(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.10446 10E-01 | 0.38092 10E-02 | 0.67773 10E-02 | 0.42272 10E-02 | 0.75211 10E-02 | 0.27426 10E-02 |
| 1 | .081236 | .019597 | .133712 | .053825 | .046132 | .058471 |
| 2 | .103526 | -.024121 | .188133 | .066496 | .071023 | .036925 |
| 3 | .102943 | .010849 | .233998 | .097926 | .090727 | -.054602 |
| 4 | .126478 | .068857 | .256308 | .103147 | .087336 | -.095130 |
| 5 | .129833 | .100245 | .269558 | .090767 | .077680 | -.097521 |
| 6 | .104908 | .103981 | .271472 | .114614 | .052580 | -.095910 |
| 7 | .082204 | .105322 | .254323 | .088676 | .050570 | -.096595 |
| 8 | .071921 | .092830 | .202561 | .041140 | .029140 | -.064544 |
| 9 | .063571 | .083792 | .186091 | -.002407 | .018649 | -.047044 |
| 10 | .088252 | .081338 | .160684 | -.057135 | .016154 | -.017244 |
| 11 | .061999 | .003218 | .112184 | -.061639 | .019325 | .018710 |
| 12 | -.005836 | -.051536 | .049407 | -.087930 | .031293 | .032389 |
| 13 | .024519 | -.040799 | .032039 | -.059814 | .021904 | .009021 |
| 14 | .010342 | -.023278 | -.015041 | -.058923 | .016789 | .001669 |
| 15 | -.008241 | -.046223 | -.064912 | -.043883 | -.005856 | .004701 |
| 16 | -.050231 | -.085274 | -.091332 | -.025493 | .008370 | .034009 |
| 17 | -.027831 | -.103921 | -.084351 | -.009452 | .003900 | .045120 |
| 18 | -.048642 | -.059540 | -.099410 | -.023762 | -.011845 | .054950 |
| 19 | -.072076 | -.010990 | -.118158 | -.019995 | .012301 | .046473 |
| 20 | -.131881 | .012703 | -.133160 | -.040711 | .038641 | .053246 |
| 21 | -.177286 | -.010995 | -.133466 | -.042170 | .059625 | .066355 |
| 22 | -.145170 | -.014364 | -.087047 | -.005740 | .064124 | .049842 |
| 23 | -.098609 | -.026443 | -.038802 | .019511 | .051671 | .058069 |
| 24 | -.052662 | -.021079 | -.010316 | .111406 | .058471 | .024670 |
| 25 | -.034508 | .012768 | .014767 | .131668 | .055209 | -.029722 |
| 26 | .018711 | .088742 | .025377 | .129405 | .044645 | -.078892 |
| 27 | .038718 | .119837 | .029123 | .069302 | .030136 | -.072913 |
| 28 | .050611 | .114547 | .009185 | .054629 | .009603 | -.069826 |
| 29 | .016574 | .066688 | -.012273 | .049340 | .027395 | -.060543 |
| 30 | -.005428 | .031831 | -.005941 | .039492 | .033878 | -.024833 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-04 |
| 1 | .357277 | .067854 | .644157 | .007998 | .254274 | -.413870 |
| 2 | .568492 | .130521 | .781557 | .092829 | .166276 | -.843315 |
| 3 | .410175 | .139678 | .655680 | .189702 | .186782 | -.800234 |
| 4 | .173174 | .023842 | .256742 | .149977 | .142490 | -.287029 |
| 5 | .188039 | -.056315 | .117237 | .072176 | .097175 | -.016054 |
| 6 | .094265 | -.055138 | .082362 | -.011051 | .099619 | .338035 |
| 7 | .080026 | -.031842 | .055049 | -.034586 | .046747 | .483627 |
| 8 | .089129 | -.028993 | .050656 | .005209 | .002880 | .373327 |
| 9-11 | .003152 | -.013893 | .026451 | .017129 | .009280 | .263366 |
| 12-14 | .061447 | .014650 | .033615 | .002139 | -.004242 | .229830 |
| 15-21 | .019445 | .015465 | .012139 | .003168 | .005568 | .047874 |
| 22-30 | -.001763 | .005763 | .010467 | .006749 | .005422 | -.029378 |

RUN NO 91B 91M 6-18-63 2306-0010(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.94128 10E-02 | 0.11592 10E-01 | 0.15415 10E-02 | 0.48797 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .631903 | .720802 | .519145 | .747017 |
| 2 | .428572 | .513687 | .175788 | .509905 |
| 3 | .344101 | .375686 | .051896 | .326171 |
| 4 | .261283 | .273174 | .061781 | .228025 |
| 5 | .156877 | .206184 | -.041772 | .148150 |
| 6 | .061576 | .070569 | -.122375 | .064162 |
| 7 | -.045621 | -.047155 | -.169781 | -.025372 |
| 8 | -.062762 | -.099021 | -.153519 | -.081219 |
| 9 | -.124215 | -.133480 | -.130365 | -.161698 |
| 10 | -.145511 | -.253667 | -.173594 | -.239533 |
| 11 | -.210035 | -.327231 | -.227873 | -.314663 |
| 12 | -.249094 | -.373518 | -.298536 | -.322177 |
| 13 | -.227707 | -.352288 | -.278717 | -.312280 |
| 14 | -.240312 | -.383142 | -.182196 | -.283392 |
| 15 | -.199983 | -.389781 | -.061686 | -.235742 |
| 16 | -.155549 | -.322824 | .002956 | -.199402 |
| 17 | -.128036 | -.281623 | .045243 | -.181210 |
| 18 | -.047004 | -.237328 | .072040 | -.144212 |
| 19 | -.070462 | -.230952 | .098525 | -.130578 |
| 20 | -.020731 | -.175490 | .004848 | -.096997 |
| 21 | .059382 | -.071619 | .019011 | -.038701 |
| 22 | .090875 | .042694 | .087498 | .039532 |
| 23 | -.014183 | .109229 | .105480 | .076327 |
| 24 | -.075733 | .134181 | .016229 | .088906 |
| 25 | -.095986 | .169356 | .007700 | .070354 |
| 26 | -.101590 | .153643 | .045456 | .025563 |
| 27 | -.127083 | .109022 | .060024 | .001767 |
| 28 | -.159004 | .073974 | .026319 | .002251 |
| 29 | -.189372 | .078404 | .039385 | -.012561 |
| 30 | -.165486 | .076845 | .012987 | .010780 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-02 |
| 0 | .037659 | .026565 | .005077 | .015252 |
| 1 | .202673 | .268164 | .104442 | .107425 |
| 2 | .177653 | .288622 | .182902 | .107870 |
| 3 | .145682 | .200924 | .223909 | .085345 |
| 4 | .069209 | .073138 | .139764 | .039233 |
| 5 | .037623 | .050178 | .073557 | .021793 |
| 6 | .039194 | .042688 | .087836 | .018862 |
| 7 | .029829 | .040395 | .107272 | .021603 |
| 8 | .024314 | .035381 | .076642 | .021575 |
| 9-11 | .019911 | .023514 | .048734 | .012014 |
| 12-14 | .024009 | .027651 | .067487 | .009116 |
| 15-21 | .016125 | .010602 | .035265 | .004066 |
| 22-30 | .014465 | .012805 | .024887 | .004149 |

RUN NC 918 46M 6-18-63 2306-0010(EST)
 RUN NC 918 91M 6-18-63 2306-0010(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .102385 | .053614 | .098253 | .222365 |
| 1 | .140816 | .156824 | .230245 | .277373 |
| 2 | .168958 | .154068 | .265859 | .359135 |
| 3 | .125063 | .116913 | .309335 | .338093 |
| 4 | .049432 | .045432 | .322777 | .174108 |
| 5 | .143638 | .163108 | .204846 | .059554 |
| 6 | .203864 | .091436 | .118658 | .175522 |
| 7-8 | .124350 | .119794 | .184008 | .107018 |
| 9-11 | .097030 | .069918 | .108861 | .126415 |
| 12-15 | .092308 | .082685 | .131882 | .139371 |
| 16-20 | .128997 | .090430 | .167640 | .120067 |
| 21-27 | .103039 | .132623 | .072065 | .129427 |
| 28-36 | .131336 | .075689 | .091253 | .093107 |
| 37-47 | .158983 | .077588 | .098605 | .054692 |
| 48-60 | .094240 | .095168 | .100930 | .133625 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .336323 | .688883 | .632164 | .289514 |
| 1 | .242783 | .735300 | .492798 | .282528 |
| 2 | .190675 | .719987 | .488718 | .335114 |
| 3 | .131871 | .612917 | .419139 | .292339 |
| 4 | .224683 | .232295 | .217953 | .092113 |
| 5 | .215614 | .223265 | .263839 | .280165 |
| 6 | .187069 | .246771 | .513224 | .430734 |
| 7 | .040226 | .179123 | .234005 | .450781 |
| 8 | .181807 | .167878 | .293352 | .309190 |
| 9-11 | .326147 | .367070 | .393984 | .521658 |
| 12-14 | .310711 | .239996 | .300203 | .516975 |
| 15-21 | .197880 | .228698 | .355491 | .284690 |
| 22-30 | .202703 | .274349 | .293679 | .312265 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)

GROSS STATISTICS

| | | |
|-----------------|------------------------|------------------|
| CLEAR STABLE | WIND SPEED 3.78 M/SEC | SIGMA A 12.1 DEG |
| | WIND DIRECTION 240 DEG | SIGMA E 4.7 DEG |
| | SOLAR RAD. 0 LY/MIN | |

| | | | | |
|-------------------------|--------------------------------|-------------------------------|-----------------|------------------|
| WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN | 301 PT BLOCK AVG |
|-------------------------|--------------------------------|-------------------------------|-----------------|------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.81775E 00 | 0.33650E-00 | 0.28840E-00 | 0.19345E-00 |
| V | 0.55700E 00 | 0.18917E-00 | 0.16824E-00 | 0.71850E-01 |
| W | 0.95439E-01 | 0.94446E-01 | 0.87311E-01 | 0.26161E-01 |
| T | 0.55241E-02 | 0.24860E-02 | 0.19262E-02 | 0.15458E-02 |
| E | 0.73509E 00 | 0.31006E-00 | 0.27198E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.23923 | 0.15346 | 0.14207 | 0.11636 |
| V | 0.19744 | 0.11506 | 0.10851 | 0.07091 |
| W | 0.08173 | 0.08130 | 0.07817 | 0.04279 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.27438E-00 | 0.11170E-01 | 0.54861E-02 | 0.93641E-02 |
| U,W | -0.88904E-01 | -0.65118E-01 | -0.60304E-01 | -0.34136E-01 |
| U,T | 0.18023E-01 | 0.12787E-01 | 0.10286E-01 | 0.93814E-02 |
| V,W | 0.40612E-01 | 0.10604E-01 | 0.10621E-01 | 0.45541E-02 |
| V,T | -0.36024E-03 | 0.23957E-02 | 0.18709E-02 | 0.14650E-02 |
| W,T | -0.46267E-02 | -0.47005E-02 | -0.44092E-02 | -0.20431E-02 |
| WE | -0.19994E-01 | 0.76135E-02 | 0.75148E-02 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.40655 | 0.04427 | 0.02491 | 0.07943 |
| U,W | -0.31824 | -0.36528 | -0.38003 | -0.47984 |
| U,T | 0.26815 | 0.44209 | 0.43642 | 0.54251 |
| V,W | 0.17614 | 0.07933 | 0.08763 | 0.10504 |
| V,T | -0.00649 | 0.11047 | 0.10393 | 0.13901 |
| W,T | -0.20150 | -0.30676 | -0.34000 | -0.32128 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.22031 10E 00 | 0.15869 10E 00 | 0.23572 10E-01 | 0.12121 10E 00 | 0.18005 10E-01 | 0.12969 10E-01 |
| 0 | .025087 | -.379998 | .436607 | .087511 | .103877 | -.340220 |
| 1 | .029884 | -.328228 | .415379 | .061113 | .094464 | -.279873 |
| 2 | .034655 | -.243767 | .364419 | .035540 | .069151 | -.195207 |
| 3 | .023520 | -.170658 | .301709 | .020742 | .043181 | -.130646 |
| 4 | .005450 | -.117452 | .237293 | .011001 | .029097 | -.080854 |
| 5 | .000410 | -.081187 | .175439 | .017639 | .021410 | -.044370 |
| 6 | -.003439 | -.041644 | .119077 | .026256 | .016056 | -.011712 |
| 7 | -.010856 | -.005169 | .070151 | .034622 | .010577 | .008827 |
| 8 | -.002942 | .013393 | .031491 | .025119 | .005808 | .027307 |
| 9 | -.000531 | .025140 | .003176 | .021062 | .000870 | .037546 |
| 10 | -.000688 | .029119 | -.016140 | .010521 | -.002360 | .043682 |
| 11 | .000784 | .038934 | -.034771 | -.001439 | -.001084 | .055894 |
| 12 | .003500 | .051433 | -.052023 | -.007478 | .000467 | .060389 |
| 13 | .004410 | .062039 | -.070881 | -.007196 | -.005618 | .058050 |
| 14 | .000249 | .072741 | -.089652 | -.011929 | -.017701 | .055825 |
| 15 | -.004493 | .080412 | -.102037 | -.020324 | -.026222 | .050698 |
| 16 | -.007899 | .086199 | -.12217 | -.014599 | -.027921 | .055766 |
| 17 | -.002218 | .091378 | -.126230 | -.010187 | -.028070 | .048147 |
| 18 | .002043 | .097080 | -.141774 | -.019812 | -.032452 | .044896 |
| 19 | .001044 | .105084 | -.154604 | -.026292 | -.041064 | .043108 |
| 20 | -.007482 | .105608 | -.163039 | -.025465 | -.042661 | .050696 |
| 21 | -.023963 | .105407 | -.167095 | -.028053 | -.040791 | .056692 |
| 22 | -.020661 | .097343 | -.170160 | -.029855 | -.034319 | .060364 |
| 23 | -.012382 | .091773 | -.170859 | -.018098 | -.026310 | .056911 |
| 24 | -.004184 | .094000 | -.171865 | -.007653 | -.020493 | .051571 |
| 25 | .002829 | .091051 | -.170869 | -.001431 | -.019982 | .049409 |
| 26 | .014031 | .071798 | -.161625 | -.013579 | -.015858 | .046676 |
| 27 | .021523 | .057501 | -.146931 | -.039148 | -.009705 | .040593 |
| 28 | .026998 | .051719 | -.130742 | -.039637 | .002526 | .034317 |
| 29 | .021072 | .046553 | -.110852 | -.034955 | .001751 | .031762 |
| 30 | .008379 | .037427 | -.086292 | -.022892 | .004645 | .030950 |
| 31 | -.004896 | .025821 | -.063024 | -.006647 | .004671 | .036054 |
| 32 | -.015346 | .004804 | -.037337 | -.002865 | .004035 | .035764 |
| 33 | -.023959 | -.012563 | -.016471 | .000686 | -.005296 | .032665 |
| 34 | -.029093 | -.021051 | .001835 | .002586 | -.012833 | .018232 |
| 35 | -.035611 | -.025625 | .015988 | .005104 | -.017126 | .006494 |
| 36 | -.031610 | -.038015 | .027543 | .008697 | -.018138 | -.003253 |
| 37 | -.018105 | -.052052 | .036861 | .005642 | -.004557 | -.014219 |
| 38 | -.005968 | -.060269 | .043330 | .001021 | .015768 | -.022822 |
| 39 | -.006030 | -.059493 | .047033 | .007592 | .029873 | -.027641 |
| 40 | .012555 | -.042316 | .046376 | .011137 | .034416 | -.026794 |
| 41 | .012213 | -.020845 | .045326 | .001464 | .035531 | -.019555 |
| 42 | .005208 | .000439 | .040292 | -.005330 | .033258 | -.011015 |
| 43 | -.002817 | .002807 | .036297 | -.007259 | .025651 | -.002697 |
| 44 | -.009291 | .002901 | .032001 | .002243 | .012274 | .004784 |
| 45 | -.009823 | -.002427 | .034471 | -.000660 | .005429 | .006590 |
| 46 | -.014086 | -.005416 | .042906 | -.000942 | .003524 | -.003390 |
| 47 | -.014628 | -.007803 | .049696 | .000257 | -.001307 | -.010888 |
| 48 | -.018659 | -.018962 | .052996 | .000937 | -.008951 | -.018124 |
| 49 | -.0012176 | -.028115 | .047236 | -.007729 | -.011262 | -.017515 |
| 50 | -.000207 | -.028369 | .041899 | -.021412 | -.012508 | -.019163 |
| 51 | .007100 | -.026247 | .037340 | -.022168 | -.004865 | -.020462 |
| 52 | .006616 | -.024514 | .033332 | -.019847 | -.000464 | -.023303 |
| 53 | .001329 | -.016898 | .027781 | -.018294 | -.003714 | -.023483 |
| 54 | .004526 | -.010044 | .024634 | -.029660 | -.007189 | -.022404 |
| 55 | .008244 | -.003345 | .026304 | -.033350 | -.008552 | -.025600 |
| 56 | .006680 | -.000314 | .028245 | -.025162 | -.010512 | -.026698 |
| 57 | .002610 | -.007451 | .029659 | -.009969 | -.015305 | -.027904 |
| 58 | .000678 | -.006416 | .030619 | .012025 | -.019576 | -.029222 |
| 59 | .000726 | -.006040 | .028888 | .014329 | -.019360 | -.036056 |
| 60 | -.004715 | -.016058 | .033388 | .021911 | -.013407 | -.034894 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.22031 10E 00 | 0.15869 10E 00 | 0.23572 10E-01 | 0.12121 10E 00 | 0.18005 10E-01 | 0.12969 10E-01 |
| 1 | -.008220 | -.023832 | .082198 | .006744 | .006565 | -.057982 |
| 2 | -.006269 | -.028018 | .140161 | .007256 | .012373 | -.070572 |
| 3 | -.006838 | -.020341 | .169198 | .000412 | .021514 | -.067500 |
| 4 | -.003235 | -.009199 | .180991 | .004132 | .028377 | -.063699 |
| 5 | .006011 | .000576 | .185148 | .005486 | .028640 | -.056461 |
| 6 | .012987 | -.001462 | .182704 | .000717 | .018275 | -.051573 |
| 7 | .017015 | -.000265 | .177215 | -.010089 | .009395 | -.046167 |
| 8 | .011714 | -.011823 | .170840 | -.012365 | .000511 | -.045452 |
| 9 | .010768 | -.014364 | .161545 | -.009390 | -.001616 | -.055570 |
| 10 | .016439 | -.011040 | .149121 | -.009040 | -.001589 | -.061714 |
| 11 | .022489 | -.007874 | .136058 | -.015215 | .003403 | -.055176 |
| 12 | .013265 | -.003570 | .125592 | -.023937 | .009413 | -.038809 |
| 13 | .004768 | -.002799 | .121403 | -.038498 | .019509 | -.022459 |
| 14 | -.005751 | -.007822 | .112067 | -.042006 | .030699 | -.015416 |
| 15 | -.011715 | -.007224 | .098535 | -.020710 | .036315 | -.015972 |
| 16 | -.013036 | .002898 | .083064 | -.005158 | .031883 | -.017074 |
| 17 | -.012946 | .004487 | .069292 | .002198 | .022045 | -.013291 |
| 18 | -.017745 | -.005204 | .058395 | -.001466 | .015714 | -.003005 |
| 19 | .023878 | -.011329 | .042847 | .016018 | .014109 | .006521 |
| 20 | -.030459 | -.009547 | .028176 | -.032858 | .015926 | .020194 |
| 21 | -.036859 | -.010814 | .011469 | -.043571 | .009427 | .025498 |
| 22 | -.037698 | -.017200 | -.000343 | -.032028 | -.004626 | .024169 |
| 23 | -.030174 | -.019324 | -.008765 | -.021790 | -.013776 | .016431 |
| 24 | -.018261 | -.019813 | -.019528 | -.016611 | -.007969 | .018022 |
| 25 | -.015735 | -.017596 | -.033841 | -.013183 | -.001937 | .020862 |
| 26 | -.019372 | -.015778 | -.049787 | -.009694 | .005631 | .020652 |
| 27 | -.024976 | -.017601 | -.058381 | -.003878 | .015169 | .024782 |
| 28 | -.021288 | -.014345 | -.058614 | -.009765 | .025610 | .020948 |
| 29 | -.019026 | -.014538 | -.056182 | -.015118 | .033551 | .021275 |
| 30 | -.016113 | -.013825 | -.054719 | -.010711 | .040176 | .017524 |
| 31 | -.014088 | -.015264 | -.054278 | .003884 | .040380 | .010436 |
| 32 | -.013707 | -.015761 | -.054509 | .001574 | .040358 | .013609 |
| 33 | -.008317 | -.001754 | -.059943 | .003252 | .036456 | .018009 |
| 34 | -.008941 | .004353 | -.066833 | .002550 | .032947 | .027191 |
| 35 | -.012079 | .019838 | -.065687 | .008524 | .029319 | .034399 |
| 36 | -.008232 | .029050 | -.063001 | .011121 | .019815 | .030822 |
| 37 | -.008308 | .026882 | -.053664 | .003300 | .011648 | .008784 |
| 38 | .000516 | .019668 | -.039772 | .002704 | .008064 | .001481 |
| 39 | .016096 | .012786 | -.025080 | .027617 | .004191 | -.003789 |
| 40 | .020296 | .012926 | -.011701 | .045661 | -.003249 | -.011056 |
| 41 | .020470 | .021755 | -.003450 | .048945 | -.014272 | -.016185 |
| 42 | .022625 | .022451 | .003253 | .036411 | -.024648 | -.023200 |
| 43 | .032220 | .017100 | .011102 | .024268 | -.036878 | -.024865 |
| 44 | .033630 | -.001087 | .015420 | .007387 | -.040999 | -.020934 |
| 45 | .028679 | -.014973 | .0155.5 | -.015690 | -.041645 | -.011210 |
| 46 | .028001 | -.018131 | .007615 | -.004218 | -.043862 | -.006930 |
| 47 | .029930 | -.008267 | .002066 | .019006 | -.044841 | -.003771 |
| 48 | .033342 | -.001025 | -.000320 | .022094 | -.037531 | .000185 |
| 49 | .038888 | .010588 | -.000880 | .013917 | -.028435 | .004836 |
| 50 | .044104 | .011935 | -.002290 | .003676 | -.021210 | .001291 |
| 51 | .043859 | .018609 | -.005007 | .005413 | -.014910 | -.003925 |
| 52 | .037398 | .023903 | -.004329 | .016858 | -.010985 | -.010582 |
| 53 | .039298 | .019926 | -.002184 | .028474 | -.018865 | -.017989 |
| 54 | .036009 | .003353 | .002415 | .036368 | -.032265 | -.019034 |
| 55 | .028036 | -.002003 | .005955 | .025886 | -.036767 | -.006842 |
| 56 | .024362 | .012235 | .009781 | .014810 | -.034006 | .002080 |
| 57 | .025332 | .020480 | .011243 | .014388 | -.032248 | .002102 |
| 58 | .023769 | .011578 | .014450 | .019744 | -.031082 | -.007142 |
| 59 | .020292 | .003760 | .016596 | .018277 | -.025564 | -.016944 |
| 60 | .017567 | -.001801 | .019423 | .013578 | -.016364 | -.013253 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.28843 10E 00 | 0.16828 10E 00 | 0.87310 10E-01 | 0.19264 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .816757 | .686686 | .571147 | .860194 |
| 2 | .605275 | .372340 | .229562 | .665000 |
| 3 | .448416 | .192110 | .076147 | .488428 |
| 4 | .322214 | .089628 | .014205 | .346415 |
| 5 | .216194 | .020252 | .000717 | .232171 |
| 6 | .124811 | -.015275 | -.015607 | .141529 |
| 7 | .044958 | -.042773 | -.038793 | .067038 |
| 8 | -.013900 | -.078165 | -.065022 | .008142 |
| 9 | -.056406 | -.090141 | -.057880 | -.039743 |
| 10 | -.080710 | -.094144 | -.053604 | -.074258 |
| 11 | -.095622 | -.094118 | -.070296 | -.096295 |
| 12 | -.105874 | -.095891 | -.090100 | -.119433 |
| 13 | -.121357 | -.094189 | -.099966 | -.138573 |
| 14 | -.132133 | -.098924 | -.101266 | -.152068 |
| 15 | -.148418 | -.103434 | -.100275 | -.172639 |
| 16 | -.170074 | -.112280 | -.082200 | -.193060 |
| 17 | -.197973 | -.128876 | -.072532 | -.207458 |
| 18 | -.220849 | -.139883 | -.066876 | -.215327 |
| 19 | -.239338 | -.135730 | -.067949 | -.215754 |
| 20 | -.252759 | -.131121 | -.078000 | -.215219 |
| 21 | -.258633 | -.140874 | -.088748 | -.219520 |
| 22 | -.258697 | -.125317 | -.078535 | -.221630 |
| 23 | -.268811 | -.094070 | -.070185 | -.227861 |
| 24 | -.271496 | -.088631 | -.063530 | -.235420 |
| 25 | -.260909 | -.088358 | -.048741 | -.237193 |
| 26 | -.239996 | -.089805 | -.037051 | -.234008 |
| 27 | -.223198 | -.094828 | -.043599 | -.226588 |
| 28 | -.195350 | -.088197 | -.053335 | -.209134 |
| 29 | -.168833 | -.059997 | -.058537 | -.186204 |
| 30 | -.134161 | -.011795 | -.037782 | -.157859 |
| 31 | -.086203 | .018297 | -.024194 | -.124064 |
| 32 | -.041969 | .039537 | -.013034 | -.090893 |
| 33 | -.008379 | .042115 | -.020826 | -.062189 |
| 34 | .021973 | .027278 | -.025703 | -.027357 |
| 35 | .039874 | .017006 | .007965 | .002779 |
| 36 | .037926 | .010341 | .055983 | .029298 |
| 37 | .094263 | .017574 | .054222 | .048980 |
| 38 | .108408 | .024591 | .049671 | .062806 |
| 39 | .108260 | .030416 | .043316 | .074557 |
| 40 | .099119 | .030417 | .027933 | .078054 |
| 41 | .071906 | .026110 | .019180 | .075854 |
| 42 | .044892 | .022372 | .014668 | .073481 |
| 43 | .032076 | .023144 | -.014052 | .065699 |
| 44 | .032645 | .024276 | -.033055 | .053906 |
| 45 | .031172 | .015418 | -.031934 | .053501 |
| 46 | .032044 | .011065 | -.019839 | .067451 |
| 47 | .036338 | .003253 | -.000756 | .076928 |
| 48 | .053915 | -.013400 | .011296 | .080335 |
| 49 | .069548 | -.038414 | .012887 | .076758 |
| 50 | .069407 | -.043777 | .010713 | .067131 |
| 51 | .068194 | -.028365 | .008566 | .057210 |
| 52 | .076661 | -.007289 | -.006042 | .042151 |
| 53 | .082097 | .014087 | -.004858 | .026855 |
| 54 | .074225 | .015797 | -.019154 | .017405 |
| 55 | .064385 | .013795 | -.017070 | .011310 |
| 56 | .050749 | .012229 | -.014948 | .008746 |
| 57 | .044440 | .007837 | -.007178 | .006584 |
| 58 | .037159 | .019883 | -.001082 | .009142 |
| 59 | .027954 | .025446 | .010057 | .004763 |
| 60 | .023789 | .033478 | .033979 | .000511 |

RUN NO 92A 15M 6-19-63 0030-0146(FEST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|---------|----------|----------|
| | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .010349 | -.002086 | .007490 | .008613 | .022258 | -.009837 |
| 1 | .108970 | -.042621 | .129538 | .123684 | .166379 | -.278920 |
| 2 | .090814 | -.078764 | .211756 | .159227 | .261064 | -.473328 |
| 3 | .065468 | -.104645 | .239454 | .163150 | .348731 | -.576303 |
| 4 | .088396 | -.073970 | .136250 | .077833 | .230510 | -.454793 |
| 5 | .091943 | -.039756 | .064280 | .016879 | .110137 | -.371310 |
| 6 | .023424 | -.036819 | .063176 | .022433 | .059301 | -.357241 |
| 7-8 | .056083 | -.032709 | .054430 | .000293 | .073549 | -.257058 |
| 9-11 | .044576 | -.022062 | .024186 | .023973 | .085300 | -.147704 |
| 12-15 | .028705 | -.011193 | .007667 | .045213 | .045068 | -.105636 |
| 16-20 | -.012190 | -.005944 | .002127 | .031939 | .030186 | -.057707 |
| 21-27 | -.016526 | -.005499 | .001869 | .007262 | .009521 | -.037567 |
| 28-36 | -.019240 | -.001257 | .000475 | .008541 | .001486 | -.020541 |
| 37-47 | .005082 | -.001072 | .000161 | .007251 | -.001798 | -.010818 |
| 48-60 | -.000941 | -.000440 | .000037 | .004673 | -.000338 | -.006863 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 1 | -.192303 | -.102415 | .077322 | -.120314 | .248668 | -.052068 |
| 2 | -.094113 | -.087166 | .124801 | -.120289 | .138490 | -.152749 |
| 3 | .151531 | -.010422 | .154485 | -.032259 | .005750 | -.276347 |
| 4 | .168710 | .023204 | .102946 | .037442 | .071362 | -.237752 |
| 5 | .059521 | -.051187 | .053741 | .016458 | .071749 | -.138584 |
| 6 | .003887 | -.071723 | .043805 | .013684 | -.064085 | -.100329 |
| 7-8 | -.076403 | -.005254 | .032590 | .025680 | .042827 | -.046616 |
| 9-11 | -.033458 | -.016424 | .019944 | .016334 | .082654 | -.057180 |
| 12-15 | -.014624 | -.039208 | .009056 | -.001208 | -.006758 | -.059671 |
| 16-20 | -.024766 | -.040037 | .005728 | -.005143 | -.009995 | -.029792 |
| 21-27 | .014037 | -.006737 | .001708 | .009567 | -.007134 | -.022553 |
| 28-36 | -.009818 | -.006033 | .000597 | .005536 | .002400 | -.010669 |
| 37-47 | -.005244 | -.002327 | -.000124 | -.002022 | .000184 | -.007795 |
| 48-60 | -.000023 | .002804 | .000085 | -.001798 | .001833 | -.000523 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-03 |
| 0 | .013530 | .004318 | .019262 | .015027 |
| 1 | .235978 | .068710 | .275856 | .186801 |
| 2 | .399200 | .116087 | .441905 | .283577 |
| 3 | .476405 | .161047 | .600686 | .320168 |
| 4 | .298315 | .136518 | .531347 | .204557 |
| 5 | .163643 | .097117 | .432110 | .136410 |
| 6 | .178981 | .091282 | .433010 | .135792 |
| 7-8 | .164429 | .090537 | .358841 | .100140 |
| 9-11 | .091869 | .069974 | .312273 | .062007 |
| 12-15 | .045312 | .045867 | .287808 | .031936 |
| 16-20 | .033473 | .036117 | .218241 | .020550 |
| 21-27 | .023695 | .023836 | .179714 | .010914 |
| 28-36 | .014498 | .016236 | .108744 | .006148 |
| 37-47 | .010140 | .010334 | .086058 | .003824 |
| 48-60 | .006291 | .007229 | .062605 | .002841 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.11795 10E 00 | 0.71174 10E-01 | 0.17289 10E-01 | 0.43388 10E-01 | 0.10539 10E-01 | 0.63595 10E-02 |
| 0 | .079387 | -.479611 | .542621 | .104963 | .128999 | -.321270 |
| 1 | .046939 | -.082972 | .222890 | .011402 | .059861 | -.027043 |
| 2 | .025366 | .102351 | -.011167 | -.077095 | .004941 | .029256 |
| 3 | .022813 | .038691 | -.014463 | -.001653 | -.016157 | .031303 |
| 4 | -.016470 | .010736 | .000151 | -.023244 | -.023373 | .010420 |
| 5 | .012378 | .021969 | .001263 | -.059032 | -.039535 | -.013823 |
| 6 | .002583 | .000592 | -.010999 | .024672 | -.039155 | -.044150 |
| 7 | .058114 | .049183 | -.063461 | .071745 | -.021049 | .036816 |
| 8 | .003572 | .003557 | -.019151 | .050560 | .022989 | .017788 |
| 9 | .056159 | -.004579 | -.004947 | -.046427 | .029969 | .012802 |
| 10 | .017090 | -.041556 | .014326 | -.021722 | .014631 | -.016004 |
| 11 | -.010598 | .038589 | -.027322 | .016178 | -.063088 | .024777 |
| 12 | -.088803 | .062542 | -.113340 | .080253 | -.061202 | .058196 |
| 13 | -.009307 | .108402 | -.141788 | .011682 | -.061603 | .077426 |
| 14 | -.030531 | .058266 | -.051247 | .000686 | -.029693 | -.014756 |
| 15 | -.073822 | .047831 | .049293 | .043311 | -.029677 | .046223 |
| 16 | .000545 | .046630 | -.063285 | .049999 | -.008929 | .088743 |
| 17 | -.012826 | -.050616 | -.036029 | -.066018 | -.010439 | .042860 |
| 18 | .007297 | .016025 | .001726 | -.002537 | -.017169 | -.015162 |
| 19 | -.007242 | -.016384 | .075424 | -.017376 | .000846 | -.010680 |
| 20 | .017411 | -.042602 | .073673 | -.031412 | .032277 | .005654 |
| 21 | .009416 | -.027461 | -.018221 | .009885 | -.000830 | .018627 |
| 22 | .010216 | .002235 | -.059350 | .062250 | -.004276 | -.004395 |
| 23 | -.034909 | -.020565 | -.034584 | .010306 | -.029780 | -.015934 |
| 24 | -.035401 | -.104428 | .049986 | .062423 | -.023506 | -.090841 |
| 25 | -.062141 | -.038691 | .030064 | .016471 | -.094014 | -.058750 |
| 26 | .003734 | .002045 | .040048 | -.008853 | -.021661 | .036108 |
| 27 | .050953 | -.043620 | .055510 | -.015761 | .027288 | .004257 |
| 28 | .005471 | -.033550 | .017056 | .021735 | .043854 | -.011350 |
| 29 | -.015198 | -.036043 | .007091 | -.023462 | -.004665 | -.019854 |
| 30 | .013463 | .027436 | -.032130 | -.032383 | .080600 | .014497 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-03 | 10E-03 | 10E-03 |
| 0 | .043627 | .004109 | .088869 | -.000001 | -.039489 | .005910 |
| 1 | .23572 | -.061088 | .665085 | -.351826 | .029795 | -.067306 |
| 2 | .169922 | -.155742 | .786933 | -.440983 | .133476 | -.126972 |
| 3 | .069418 | -.161306 | .760505 | -.423377 | .130500 | -.091732 |
| 4 | -.053010 | -.066999 | .440395 | -.102928 | .058548 | -.024072 |
| 5 | -.029678 | -.098887 | .405754 | .235033 | .064685 | -.050679 |
| 6 | .125392 | -.202757 | .671716 | .128912 | .189270 | -.080595 |
| 7 | .161437 | -.230160 | .678934 | .341512 | .218578 | -.088520 |
| 8 | .100263 | -.153073 | .410156 | .886738 | .152261 | -.078343 |
| 9-11 | .008442 | -.158554 | .412738 | .759662 | .003397 | -.107399 |
| 12-14 | .024973 | -.223876 | .553575 | -.039039 | .090406 | -.128159 |
| 15-21 | .005677 | -.172330 | .305207 | .398332 | .038101 | -.081502 |
| 22-30 | .023172 | -.100078 | .160002 | .045179 | .028923 | -.097348 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.11795 10E 00 | 0.71174 10E-01 | 0.17289 10E-01 | 0.43388 10E-01 | 0.10539 10E-01 | 0.63595 10E-02 |
| 1 | .022762 | -.022286 | .215803 | -.028164 | .059056 | -.079003 |
| 2 | -.006360 | -.027267 | .129380 | -.045800 | .042427 | -.032220 |
| 3 | .034823 | -.044836 | .074768 | -.000267 | .086162 | -.027873 |
| 4 | .087199 | .059307 | .047532 | .100108 | .008581 | -.066330 |
| 5 | .131528 | .024711 | .040490 | .069418 | -.064250 | -.056097 |
| 6 | .089878 | .015123 | .024123 | .072660 | -.041875 | -.069503 |
| 7 | -.014291 | .019817 | -.031892 | -.039120 | -.005576 | -.026752 |
| 8 | .005479 | -.005279 | -.050206 | -.010837 | .004795 | .045580 |
| 9 | .013160 | -.012128 | -.045684 | -.093863 | .009360 | .000428 |
| 10 | .046934 | -.007766 | .004765 | -.022142 | .033810 | -.038507 |
| 11 | .052615 | .006013 | .045336 | .001650 | .054655 | -.023032 |
| 12 | .039116 | -.002584 | .017030 | -.023368 | .018731 | -.011028 |
| 13 | .022932 | -.054854 | .027347 | .016282 | .013061 | .039188 |
| 14 | .002661 | -.010952 | -.004825 | -.038497 | -.015803 | .039777 |
| 15 | .005773 | -.015680 | -.046770 | .027523 | -.003692 | .022327 |
| 16 | .058861 | -.029373 | -.091592 | .020543 | -.047090 | .071954 |
| 17 | -.046084 | -.022975 | -.062427 | -.108860 | -.015643 | .062254 |
| 18 | -.074863 | .017263 | -.058296 | -.069240 | .071031 | .045470 |
| 19 | -.040186 | -.064056 | .026267 | .012961 | .066242 | .055379 |
| 20 | -.002366 | -.004668 | .103761 | .042136 | .046435 | -.012106 |
| 21 | .035629 | .063019 | .106333 | .038583 | -.009522 | -.146974 |
| 22 | -.022539 | .044515 | .048563 | .011853 | .029325 | -.069908 |
| 23 | .000766 | .008635 | -.002619 | -.001935 | .035969 | -.034728 |
| 24 | -.013739 | .034390 | -.058817 | -.000525 | -.038454 | -.017560 |
| 25 | -.064989 | -.026635 | -.078605 | -.040597 | -.031348 | .015592 |
| 26 | -.071183 | .028421 | -.079746 | -.028946 | .012254 | .015390 |
| 27 | -.006940 | -.007904 | -.021408 | .006104 | .025296 | .005664 |
| 28 | -.008277 | -.022446 | .023017 | .038623 | -.027049 | -.017524 |
| 29 | -.055830 | .033280 | -.029657 | -.051953 | -.034298 | -.013509 |
| 30 | -.018582 | -.029751 | .076468 | .064157 | -.038079 | -.010238 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-03 | 10E-03 | 10E-02 | 10E-03 | 10E-03 |
| 1 | .304351 | -.341394 | .070317 | -.026143 | .103907 | -.029505 |
| 2 | .298353 | .070425 | .171716 | .011626 | .019104 | -.084970 |
| 3 | .209696 | .546922 | .355999 | .050494 | .009836 | -.154407 |
| 4 | .106911 | .168257 | .367606 | .053876 | .021830 | -.077018 |
| 5 | .110880 | -.314507 | .341774 | .041040 | .018499 | -.018845 |
| 6 | .111876 | -.276694 | .645815 | .026303 | .147027 | -.087101 |
| 7 | -.028703 | -.501013 | .554221 | -.045097 | .261344 | -.047190 |
| 8 | -.139029 | -.606823 | .109849 | -.103006 | .169977 | .027697 |
| 9-11 | -.166404 | -.560217 | .232652 | -.067026 | .077352 | .017023 |
| 12-14 | .074934 | -.008219 | .341033 | .001080 | -.031255 | -.078176 |
| 15-21 | .036897 | .303663 | .169045 | .012948 | .003348 | -.037383 |
| 22-30 | .027022 | -.439569 | .091110 | -.014141 | .050108 | -.001719 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.19349 10E 00 | 0.71905 10E-01 | 0.26180 10E-01 | 0.15448 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .260958 | .164162 | .049817 | .413891 |
| 2 | -.043420 | .052203 | -.042424 | .130197 |
| 3 | -.048902 | .036198 | -.056497 | .012068 |
| 4 | .005073 | .058834 | -.044264 | .017485 |
| 5 | -.000987 | .014322 | -.088709 | -.010804 |
| 6 | -.032209 | .113194 | -.017699 | -.077084 |
| 7 | -.105742 | .089361 | -.024196 | -.119017 |
| 8 | -.068178 | .104457 | .012282 | -.068346 |
| 9 | .007912 | -.037703 | -.120058 | -.044060 |
| 10 | .054236 | -.011734 | -.051848 | -.029136 |
| 11 | -.034748 | -.057343 | -.115462 | -.074941 |
| 12 | -.133787 | -.057193 | -.012574 | -.138282 |
| 13 | -.137035 | -.211544 | -.092400 | -.194424 |
| 14 | -.138413 | -.122888 | .012864 | -.088989 |
| 15 | -.095124 | .000466 | .007767 | -.079048 |
| 16 | -.049675 | -.018141 | -.024048 | -.027141 |
| 17 | .006297 | -.085564 | .026852 | .027570 |
| 18 | .039200 | -.083259 | .024819 | .017424 |
| 19 | .075066 | -.228362 | .001492 | .131635 |
| 20 | .068065 | -.091823 | .061051 | .127423 |
| 21 | -.009211 | -.092647 | .002555 | -.048292 |
| 22 | -.085383 | -.035056 | -.016761 | -.062433 |
| 23 | -.057010 | -.112304 | -.005357 | -.066558 |
| 24 | -.036527 | -.059242 | .091889 | -.008159 |
| 25 | -.036910 | -.072463 | -.038901 | -.009544 |
| 26 | -.018772 | -.105688 | -.065427 | -.022846 |
| 27 | .123635 | .010796 | -.050759 | .043823 |
| 28 | .013528 | -.042371 | -.013521 | .008605 |
| 29 | .034560 | -.050072 | .081321 | .006337 |
| 30 | -.001855 | .045358 | -.014315 | -.046812 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-03 |
| 0 | .014818 | .134147 | .004849 | .025749 |
| 1 | .106925 | .802081 | .054749 | .126318 |
| 2 | .118149 | .566171 | .091173 | .130646 |
| 3 | .122276 | .302727 | .131950 | .153773 |
| 4 | .084652 | .163364 | .112975 | .110641 |
| 5 | .077553 | .145827 | .086137 | .076920 |
| 6 | .124271 | .220197 | .095114 | .106800 |
| 7 | .118958 | .378420 | .119093 | .104753 |
| 8 | .065090 | .411057 | .133642 | .057276 |
| 9-11 | .084983 | .294110 | .113788 | .057612 |
| 12-14 | .111643 | .209011 | .094630 | .069000 |
| 15-21 | .070502 | .315457 | .124149 | .039163 |
| 22-30 | .062274 | .327015 | .141593 | .040396 |

RUN NO 92A 46M 6-19-63 0030-0146(EST)

GROSS STATISTICS

CLEAR SIGMA A 8.00 DEG
STABLE WIND SPEED 5.97 M/SEC
WIND DIRECTION 243 DEG
SOLAR RAD. 0 LY/MIN SIGMA E 2.0 DEG

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.68803E 00 | 0.16146E-00 | 0.13058E-00 | 0.84831E-01 |
| V | 0.63809E 00 | 0.10284E-00 | 0.87080E-01 | 0.36360E-01 |
| W | 0.42033E-01 | 0.41016E-01 | 0.38547E-01 | 0.11425E-01 |
| T | 0.19185E-01 | 0.78907E-02 | 0.61201E-02 | 0.50164E-02 |
| E | 0.68408E 00 | 0.15270E-00 | 0.12810E-00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.13894 | 0.06731 | 0.06053 | 0.04879 |
| V | 0.13380 | 0.05372 | 0.04943 | 0.03194 |
| W | 0.03434 | 0.03392 | 0.03289 | 0.01790 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.33265E-00 | 0.17247E-01 | 0.14170E-01 | 0.48359E-02 |
| U,W | -0.39109E-01 | -0.33012E-01 | -0.31494E-01 | -0.12071E-01 |
| U,T | 0.79377E-03 | 0.17308E-01 | 0.13599E-01 | 0.11226E-01 |
| V,W | -0.66256E-02 | -0.91308E-02 | -0.90572E-02 | -0.14950E-02 |
| V,T | 0.41142E-01 | 0.12945E-02 | 0.26730E-02 | -0.12745E-02 |
| W,T | -0.37292E-02 | -0.59307E-02 | -0.53387E-02 | -0.25991E-02 |
| WE | 0.12403E-02 | 0.49309E-02 | 0.45850E-02 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.50204 | 0.13385 | 0.13288 | 0.08707 |
| U,W | -0.22997 | -0.40566 | -0.44391 | -0.38775 |
| U,T | 0.00691 | 0.48489 | 0.48105 | 0.54421 |
| V,W | -0.04046 | -0.14059 | -0.15633 | -0.07335 |
| V,T | 0.37184 | 0.04544 | 0.11579 | -0.09437 |
| W,T | -0.13132 | -0.32966 | -0.34759 | -0.34332 |

RUN NO 92A 46M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.10664 10E 00 | 0.70943 10E-01 | 0.28270 10E-01 | 0.57929 10E-01 | 0.23084 10E-01 | 0.15357 10E-01 |
| 0 | .133125 | -.444059 | .480941 | -.156420 | .115735 | -.347619 |
| 1 | .108980 | -.342600 | .447076 | -.084439 | .092285 | -.285035 |
| 2 | .062909 | -.202302 | .375020 | -.014771 | .043967 | -.189066 |
| 3 | .026687 | -.094103 | .296632 | .018329 | .001112 | -.116775 |
| 4 | -.000554 | -.033816 | .225427 | .029485 | -.025901 | -.065286 |
| 5 | -.019369 | .001257 | .161503 | .031867 | -.041760 | -.024819 |
| 6 | -.042406 | .034503 | .104727 | .045969 | -.053437 | .010090 |
| 7 | -.062024 | .060998 | .056933 | .066358 | -.060242 | .039324 |
| 8 | -.068085 | .073694 | .024183 | .065121 | -.060785 | .054477 |
| 9 | -.066505 | .061084 | -.000119 | .040746 | -.050086 | .054808 |
| 10 | -.062468 | .047092 | -.017648 | .024672 | -.041715 | .047773 |
| 11 | -.049508 | .044271 | -.033987 | .019816 | -.038657 | .042695 |
| 12 | -.034905 | .052142 | -.052510 | .015838 | -.033123 | .045631 |
| 13 | -.022316 | .053207 | -.063962 | .003856 | -.018769 | .047212 |
| 14 | -.015319 | .047452 | -.071144 | -.010501 | -.000374 | .041632 |
| 15 | -.013479 | .041886 | -.076416 | -.010804 | .010178 | .031457 |
| 16 | -.001294 | .040606 | -.080879 | -.018188 | .019744 | .021322 |
| 17 | .010338 | .037376 | -.087123 | -.019883 | .025449 | .014346 |
| 18 | .025479 | .026060 | -.091037 | -.039164 | .032027 | .007786 |
| 19 | .030720 | .026020 | -.092418 | -.034763 | .037537 | .006051 |
| 20 | .035020 | .036333 | -.095725 | -.019393 | .041304 | .012287 |
| 21 | .036194 | .044662 | -.105484 | -.001877 | .035777 | .023800 |
| 22 | .033052 | .048696 | -.118387 | .004121 | .025430 | .038327 |
| 23 | .029745 | .040373 | -.129775 | -.013179 | .018028 | .050210 |
| 24 | .023608 | .028883 | -.136789 | -.020136 | .012038 | .054971 |
| 25 | .014367 | .020930 | -.136377 | -.007485 | .000777 | .057951 |
| 26 | .003180 | .022261 | -.128530 | .010743 | -.008114 | .061387 |
| 27 | -.006138 | .024969 | -.120852 | .020325 | -.010444 | .058210 |
| 28 | -.018177 | .020600 | -.119900 | .007279 | -.006169 | .048980 |
| 29 | -.020305 | .025500 | -.115526 | -.007303 | .002111 | .037549 |
| 30 | -.011858 | .029655 | -.100051 | -.011492 | .010089 | .022553 |
| 31 | -.000901 | .029957 | -.087437 | -.018638 | .010346 | .020317 |
| 32 | .011751 | .024738 | -.080004 | -.020590 | .008589 | .016798 |
| 33 | .015033 | .021382 | -.075857 | -.012060 | .006271 | .018303 |
| 34 | .011256 | .020525 | -.071426 | -.005236 | .010353 | .014457 |
| 35 | -.001010 | .020043 | -.059344 | .002874 | .018567 | .003081 |
| 36 | -.011707 | .016928 | -.050176 | -.007126 | .022804 | -.005858 |
| 37 | -.013202 | .004059 | -.044467 | -.014193 | .017885 | -.013781 |
| 38 | -.007854 | -.010062 | -.040545 | -.012160 | .007272 | -.015757 |
| 39 | -.006666 | .000381 | -.037580 | -.007219 | -.005315 | -.015099 |
| 40 | -.005579 | .015427 | -.035700 | .008435 | -.012728 | -.011856 |
| 41 | .006058 | .023286 | -.025916 | .008303 | -.021443 | -.008372 |
| 42 | .019450 | .012931 | -.016803 | .009328 | -.032576 | -.004675 |
| 43 | .010422 | .002281 | -.012683 | .010504 | -.043138 | .002183 |
| 44 | -.005073 | -.013724 | -.009032 | .018121 | -.047931 | .004075 |
| 45 | -.003056 | -.023620 | -.003682 | .011381 | -.042450 | .002416 |
| 46 | .008000 | -.032926 | .004178 | .005389 | -.035995 | -.000986 |
| 47 | .014148 | -.038520 | .009431 | -.006072 | -.030379 | .000301 |
| 48 | .006382 | -.038523 | .014617 | -.001364 | -.021520 | .007890 |
| 49 | .000787 | -.035376 | .018520 | .000267 | -.009801 | .011608 |
| 50 | .001019 | -.031659 | .027300 | .000537 | -.000642 | .008648 |
| 51 | .001979 | -.032015 | .041042 | .005423 | .006764 | .000841 |
| 52 | .001391 | -.047188 | .050812 | .012643 | .010311 | -.009007 |
| 53 | -.001921 | -.046981 | .051289 | .015306 | .013349 | -.011392 |
| 54 | -.004890 | -.036250 | .046890 | .014641 | .014594 | -.011078 |
| 55 | -.008132 | -.029434 | .044102 | .005920 | .018990 | -.015299 |
| 56 | -.015838 | -.017238 | .040630 | .004831 | .016623 | -.015637 |
| 57 | -.025313 | -.007710 | .040064 | .006559 | .008757 | -.008185 |
| 58 | -.029883 | -.003144 | .040212 | .015991 | .001503 | .003163 |
| 59 | -.026444 | -.005073 | .041954 | .014409 | .000238 | .007905 |
| 60 | -.018210 | -.003987 | .040948 | .001323 | .006113 | .003708 |

RUN NO 92A 46M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.10664 10E 00 | 0.70943 10E-01 | 0.28270 10E-01 | 0.57929 10E-01 | 0.23084 10E-01 | 0.15357 10E-01 |
| 1 | -.005513 | -.000984 | .074281 | -.019163 | .049257 | -.040787 |
| 2 | -.006548 | -.010469 | .109458 | -.031581 | .073284 | -.037254 |
| 3 | -.003735 | -.017814 | .122337 | -.023661 | .079690 | -.028344 |
| 4 | .004272 | -.029987 | .126562 | -.024854 | .080577 | -.020182 |
| 5 | .000014 | -.043684 | .129960 | -.022401 | .083334 | -.015461 |
| 6 | -.010556 | -.048020 | .129078 | -.023438 | .085210 | -.014671 |
| 7 | -.012723 | -.045063 | .123358 | -.005891 | .080909 | -.011281 |
| 8 | -.014413 | -.037124 | .117839 | .007554 | .069554 | -.003367 |
| 9 | -.013364 | -.040168 | .114835 | .016200 | .059778 | -.000122 |
| 10 | -.010218 | -.043731 | .110630 | .023814 | .049160 | .005806 |
| 11 | -.003710 | -.037674 | .103513 | .014206 | .047768 | .003506 |
| 12 | .001216 | -.031004 | .097232 | -.001993 | .055431 | -.002284 |
| 13 | -.001168 | -.022192 | .090372 | -.008890 | .050480 | -.002890 |
| 14 | -.007711 | -.009590 | .083445 | .002896 | .037697 | .000817 |
| 15 | -.009675 | .000450 | .073543 | .010745 | .025828 | .006370 |
| 16 | -.004671 | .008794 | .063973 | .019317 | .019448 | .006423 |
| 17 | -.001310 | .006133 | .053909 | .014513 | .012798 | .011174 |
| 18 | -.005099 | .011307 | .046856 | .003121 | .011096 | .013146 |
| 19 | -.009799 | .006765 | .042614 | .005648 | .003706 | .011095 |
| 20 | -.015646 | -.008435 | .038420 | .000587 | -.000438 | .009475 |
| 21 | -.012901 | -.013898 | .028128 | -.003685 | -.005115 | .007041 |
| 22 | -.008748 | -.008459 | .017207 | -.000479 | -.002665 | .007449 |
| 23 | -.005973 | -.007516 | .009603 | -.009319 | -.002009 | .012318 |
| 24 | -.013325 | -.007445 | .002306 | -.024268 | -.001668 | .015105 |
| 25 | -.015678 | -.006388 | -.003129 | -.030019 | .002343 | .015093 |
| 26 | -.011355 | .001595 | -.007776 | -.027345 | .004999 | .010829 |
| 27 | -.005650 | .012082 | -.011725 | -.006473 | .001581 | .004177 |
| 28 | -.008336 | .022833 | -.019311 | -.004297 | -.002335 | -.004059 |
| 29 | -.008948 | .031049 | -.027517 | -.008023 | -.008441 | -.013050 |
| 30 | -.011713 | .032391 | -.028416 | -.005133 | -.011146 | -.020365 |
| 31 | -.010682 | .029325 | -.029819 | .001722 | -.015746 | -.016840 |
| 32 | -.005450 | .029264 | -.038658 | -.005452 | -.018615 | -.007811 |
| 33 | .002430 | .018946 | -.052510 | -.007727 | -.020248 | .011627 |
| 34 | .012634 | .018714 | -.058273 | -.003503 | -.023987 | .025156 |
| 35 | .022796 | .034441 | -.056701 | .000056 | -.025290 | .025174 |
| 36 | .026250 | -.007374 | -.057896 | -.007880 | -.024393 | .020426 |
| 37 | .030124 | -.019451 | -.061937 | -.016082 | -.028224 | .019583 |
| 38 | .029005 | -.030081 | -.059820 | -.011371 | -.026686 | .013317 |
| 39 | .025584 | -.031047 | -.055679 | .003824 | -.028507 | .010800 |
| 40 | .026999 | -.022093 | -.053870 | .024443 | -.032333 | .018985 |
| 41 | .026430 | -.014794 | -.050918 | .028135 | -.035324 | .025733 |
| 42 | .018216 | -.010842 | -.047122 | .016509 | -.032324 | .025654 |
| 43 | .011284 | -.009256 | -.040934 | .004261 | -.020517 | .021198 |
| 44 | .005735 | -.016433 | -.031016 | -.013320 | -.007134 | .019985 |
| 45 | -.001123 | -.020565 | -.020568 | -.023143 | .005230 | .017041 |
| 46 | -.011107 | -.023019 | -.011871 | -.027738 | .014943 | .011928 |
| 47 | -.017819 | -.025529 | -.003033 | -.025076 | .017668 | .007550 |
| 48 | -.021895 | -.021038 | .008251 | -.010101 | .015134 | -.004658 |
| 49 | -.023247 | -.015528 | .021283 | .000725 | .014053 | -.020038 |
| 50 | -.017404 | -.006567 | .025634 | .008272 | .020550 | -.027841 |
| 51 | -.012932 | -.002451 | .024850 | .020615 | .029987 | -.027798 |
| 52 | -.008462 | -.002087 | .024677 | .019470 | .030777 | -.025231 |
| 53 | -.004722 | -.004697 | .024993 | .026751 | .021743 | -.023084 |
| 54 | -.000841 | -.006234 | .025324 | .026495 | .014720 | .023000 |
| 55 | -.000148 | -.008835 | .028543 | .024220 | .015889 | -.027214 |
| 56 | -.012080 | -.008748 | .034835 | .018451 | .016946 | -.033775 |
| 57 | -.020905 | -.003817 | .039732 | .006638 | .011385 | -.025455 |
| 58 | -.026852 | .000243 | .042857 | -.002179 | .007987 | -.019020 |
| 59 | -.024352 | .013441 | .040486 | -.009688 | .008138 | -.024441 |
| 60 | -.012514 | .015289 | .034040 | -.012985 | .015907 | -.028010 |

RUN NC 92A 46M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.13059 10E 00 | 0.87074 10E-01 | 0.38539 10E-01 | 0.61195 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .806685 | .643355 | .596134 | .870985 |
| 2 | .567182 | .284387 | .244348 | .690576 |
| 3 | .391119 | .076511 | .075598 | .531712 |
| 4 | .262044 | -.018801 | .010859 | .405423 |
| 5 | .166472 | -.038145 | -.025432 | .303061 |
| 6 | .090188 | -.050469 | -.067344 | .214334 |
| 7 | .024185 | -.070263 | -.097773 | .138277 |
| 8 | -.035274 | -.081655 | -.101990 | .076518 |
| 9 | -.079428 | -.080991 | -.084477 | .026278 |
| 10 | -.108348 | -.074042 | -.071598 | -.012032 |
| 11 | -.120950 | -.078390 | -.060458 | -.051313 |
| 12 | -.136651 | -.080540 | -.080170 | -.089101 |
| 13 | -.149790 | -.089034 | -.076837 | -.122888 |
| 14 | -.156945 | -.094535 | -.065229 | -.145787 |
| 15 | -.167485 | -.098558 | -.051927 | -.158754 |
| 16 | -.174204 | -.110614 | -.046058 | -.173930 |
| 17 | -.176212 | -.105059 | -.052653 | -.194907 |
| 18 | -.172936 | -.075330 | -.037340 | -.210075 |
| 19 | -.166205 | -.063358 | -.032241 | -.228037 |
| 20 | -.161567 | -.052165 | -.039294 | -.242343 |
| 21 | -.158788 | -.041344 | -.041868 | -.255951 |
| 22 | -.149907 | -.020947 | -.060898 | -.270608 |
| 23 | -.135787 | -.001991 | -.070543 | -.285573 |
| 24 | -.115207 | -.007882 | -.072070 | -.294319 |
| 25 | -.100403 | -.039088 | -.063359 | -.299292 |
| 26 | -.092630 | -.074378 | -.062391 | -.306182 |
| 27 | -.089409 | -.090380 | -.083996 | -.300366 |
| 28 | -.086412 | -.071144 | -.067937 | -.281673 |
| 29 | -.079293 | -.031815 | -.060468 | -.256201 |
| 30 | -.074101 | -.006187 | -.059664 | -.220999 |
| 31 | -.071967 | .019710 | -.046240 | -.180515 |
| 32 | -.066900 | .039626 | -.040142 | -.143607 |
| 33 | -.056962 | .041386 | -.040912 | -.112472 |
| 34 | -.053193 | .012730 | -.018955 | -.087489 |
| 35 | -.046300 | -.037669 | -.018584 | -.067108 |
| 36 | -.044023 | -.055315 | -.008547 | -.048355 |
| 37 | -.034287 | -.033432 | -.013373 | -.028963 |
| 38 | -.018531 | -.026987 | -.033738 | -.011007 |
| 39 | -.020855 | -.016172 | -.029817 | -.011751 |
| 40 | -.032938 | -.019345 | .017362 | .034854 |
| 41 | -.041925 | .000158 | .011088 | .053195 |
| 42 | -.032640 | .013756 | .018178 | .066655 |
| 43 | -.019086 | .025161 | .018033 | .073824 |
| 44 | -.017429 | .010653 | .006651 | .080069 |
| 45 | -.019922 | -.004022 | -.006435 | .087141 |
| 46 | -.017184 | -.003978 | -.010379 | .096619 |
| 47 | -.008236 | .005070 | .018412 | .103484 |
| 48 | -.001411 | .012945 | .027010 | .103434 |
| 49 | .005516 | .016778 | .014815 | .102120 |
| 50 | .015127 | .011567 | .007487 | .097181 |
| 51 | .028659 | .019003 | .005010 | .090539 |
| 52 | .043112 | .016420 | .019358 | .079254 |
| 53 | .051564 | .007453 | .022422 | .069549 |
| 54 | .053950 | .012529 | .020835 | .061046 |
| 55 | .051905 | .028240 | .031186 | .054110 |
| 56 | .052221 | .032790 | .027504 | .044985 |
| 57 | .055732 | .022729 | .014411 | .034242 |
| 58 | .055302 | .004682 | -.003279 | .018857 |
| 59 | .054311 | -.014953 | -.002441 | .009468 |
| 60 | .048121 | -.032471 | .014394 | .001540 |

RUN NO 92A 46M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-03 | 10E-03 | 10E-03 |
| 0 | -.001867 | -.006175 | .014883 | .012573 | -.011611 | -.032823 |
| 1 | -.023081 | -.131762 | .204422 | .197237 | -.062128 | -.354998 |
| 2 | -.018778 | -.216815 | .254374 | .266988 | -.127468 | -.478646 |
| 3 | .018080 | -.261057 | .233609 | .135699 | -.084175 | -.545426 |
| 4 | .107575 | -.246857 | .150170 | -.181355 | .141717 | -.436026 |
| 5 | .210818 | -.249843 | .111623 | -.464055 | .273077 | -.412511 |
| 6 | .244589 | -.232956 | .099384 | -.805295 | .427432 | -.504249 |
| 7-8 | .158841 | -.209391 | .074400 | -.893942 | .362816 | -.413121 |
| 9-11 | .078518 | -.150475 | .034008 | -.71437 | .158306 | -.197094 |
| 12-15 | .026864 | -.096357 | .017182 | -.317421 | .111980 | -.130961 |
| 16-20 | .023631 | -.053173 | .006512 | -.220148 | .058693 | -.067148 |
| 21-27 | .016478 | -.044625 | .004554 | -.281435 | .038779 | -.057105 |
| 28-36 | .005046 | -.014061 | .001210 | -.084084 | .005307 | -.024183 |
| 37-47 | .003420 | -.009482 | .000494 | -.100207 | .001098 | -.012700 |
| 48-60 | -.000526 | -.007319 | .000154 | -.050562 | .001116 | -.005705 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|---------|----------|
| | 10E-03 | 10E-03 | 10E-02 | 10E-03 | 10E-03 | 10E-03 |
| 1 | -.419311 | -.437991 | .078515 | -.158260 | .297655 | .071499 |
| 2 | -.555969 | -.556992 | .123869 | .000297 | .480386 | -.011531 |
| 3 | -.207734 | -.977539 | .127740 | .106239 | .560902 | -.040188 |
| 4 | .232518 | -.758380 | .071463 | -.016629 | .405005 | -.050315 |
| 5 | -.218325 | -.345478 | .051675 | -.275310 | .364375 | -.103501 |
| 6 | -.303347 | -.483745 | .042602 | -.390047 | .281209 | -.062362 |
| 7-8 | .039417 | -.147099 | .026746 | -.235580 | .133560 | -.036772 |
| 9-11 | .096385 | .155752 | .018424 | -.251678 | .127095 | -.054393 |
| 12-15 | .032426 | .018495 | .011699 | -.048014 | .046323 | -.035513 |
| 16-20 | -.154951 | .087802 | .006546 | .012915 | .029816 | -.031470 |
| 21-27 | -.047660 | -.007594 | .004062 | -.065502 | .030691 | -.025207 |
| 28-36 | .032410 | .011321 | .001881 | -.015369 | .009285 | -.014140 |
| 37-47 | .000037 | .015924 | .000787 | .010166 | .003172 | -.011412 |
| 48-60 | -.006419 | -.001900 | .000266 | .026880 | .000532 | -.002241 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .008370 | .023356 | .007039 | .005414 |
| 1 | .109507 | .280642 | .124258 | .077353 |
| 2 | .146386 | .414682 | .191709 | .109696 |
| 3 | .166601 | .555074 | .228533 | .108166 |
| 4 | .143174 | .571351 | .196080 | .059386 |
| 5 | .111271 | .530248 | .199269 | .038764 |
| 6 | .085793 | .474069 | .228294 | .038700 |
| 7-8 | .064655 | .414301 | .199684 | .029169 |
| 9-11 | .044340 | .389166 | .155671 | .015857 |
| 12-15 | .026211 | .292089 | .122413 | .009938 |
| 16-20 | .019095 | .231038 | .089165 | .005379 |
| 21-27 | .011187 | .154191 | .078780 | .003609 |
| 28-36 | .006980 | .082427 | .047803 | .001802 |
| 37-47 | .004308 | .063544 | .033874 | .001151 |
| 48-60 | .002727 | .042245 | .023377 | .000801 |

RUN NO 92A 46M 6-19-63 0030-0146(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.55520 10E-01 | 0.31100 10E-01 | 0.20623 10E-01 | 0.20357 10E-01 | 0.13499 10E-01 | 0.75615 10E-02 |
| 0 | .087102 | -.388146 | .544376 | -.073439 | -.094417 | -.343730 |
| 1 | .008437 | .033759 | .211137 | .071584 | -.112963 | -.047302 |
| 2 | .091519 | .024652 | -.07680 | -.026025 | -.072314 | .019928 |
| 3 | .027750 | .059763 | -.107348 | -.037325 | -.065225 | .075040 |
| 4 | .038700 | .071611 | -.119123 | -.013151 | -.060304 | .073198 |
| 5 | .048362 | -.021587 | -.054067 | -.014151 | -.047031 | .051297 |
| 6 | .021244 | .016070 | .020649 | -.015205 | .006953 | .046245 |
| 7 | .044909 | .090297 | .026544 | -.040047 | -.022466 | .04553 |
| 8 | .060086 | .056191 | .019378 | -.054890 | .042499 | .011078 |
| 9 | .000462 | -.007133 | .027837 | .009514 | -.024259 | -.046472 |
| 10 | -.020089 | -.013043 | -.000342 | -.016740 | -.031713 | .008863 |
| 11 | -.042414 | .033850 | -.036192 | .031593 | -.045282 | .039559 |
| 12 | -.014287 | -.048722 | .011293 | -.029937 | -.024190 | -.013035 |
| 13 | -.079167 | .055744 | .003891 | .021461 | -.021330 | .010431 |
| 14 | -.070954 | -.089240 | .060143 | .051131 | -.064231 | -.021026 |
| 15 | -.061399 | -.057753 | .009489 | -.032668 | -.042498 | -.000189 |
| 16 | -.030326 | .04055 | .002379 | -.055871 | .015807 | .016675 |
| 17 | .006825 | -.048227 | .020798 | -.012571 | .047836 | .020573 |
| 18 | -.002475 | -.055895 | .013014 | -.018513 | .028778 | -.036954 |
| 19 | -.066524 | -.012088 | -.016390 | .073367 | -.030511 | -.038041 |
| 20 | -.077453 | -.068504 | -.007103 | -.030104 | -.009678 | -.032431 |
| 21 | -.035498 | .021091 | -.058912 | .022236 | .031537 | .040070 |
| 22 | -.019608 | .043635 | -.075989 | -.031043 | .073714 | .013254 |
| 23 | -.033059 | .008817 | -.038873 | .012430 | .045712 | .013188 |
| 24 | .002111 | -.033012 | -.021141 | -.023371 | .057769 | -.012079 |
| 25 | -.005249 | .098219 | -.096539 | -.043878 | .053095 | .076352 |
| 26 | -.048896 | .036402 | -.107525 | .115335 | .005768 | .047485 |
| 27 | .051368 | -.057881 | -.026255 | -.020551 | .063145 | -.011428 |
| 28 | .016884 | -.015373 | .058431 | -.049737 | .054627 | -.048643 |
| 29 | .039197 | -.048163 | .090043 | -.003392 | .063611 | -.084422 |
| 30 | .088092 | .033941 | -.003724 | -.082498 | .105266 | .029940 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|---------|----------|----------|----------|
| | 10E-02 | 10E-03 | 10E-02 | 10E-03 | 10E-03 | 10E-03 |
| 0 | .022630 | .020057 | .018742 | -.100152 | -.213301 | .016805 |
| 1 | .188154 | .223284 | .069620 | -.241430 | -.653524 | .027786 |
| 2 | .145264 | .081744 | .033861 | -.045127 | -.216842 | -.022486 |
| 3 | .044752 | -.403803 | .041809 | .037869 | -.138997 | -.093001 |
| 4 | -.032163 | -.676699 | .066837 | .115235 | -.229896 | -.142405 |
| 5 | -.044538 | -.510828 | .067358 | .166808 | -.189396 | -.163722 |
| 6 | -.004298 | -.462304 | .078943 | .115506 | -.068417 | -.207221 |
| 7 | .043790 | -.411820 | .098847 | -.042952 | .055449 | -.198635 |
| 8 | .020230 | -.377061 | .104843 | -.066131 | .056505 | -.166862 |
| 9-11 | -.003173 | -.552170 | .076460 | .058992 | .000619 | -.115064 |
| 12-14 | -.019157 | -.747108 | .044954 | .096791 | -.051910 | -.142544 |
| 15-21 | -.007321 | -.453156 | .028871 | -.131840 | .002282 | -.087395 |
| 22-30 | .059493 | -.838536 | .025000 | -.277372 | .040233 | -.119798 |

RUN NC 92A 46K 6-19-63 0030-0146(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.55520 10E-01 | 0.31100 10E-01 | 0.20623 10E-01 | 0.20357 10E-01 | 0.13499 10E-01 | 0.75615 10E-02 |
| 1 | -.018970 | -.078511 | .175638 | -.047242 | .104634 | -.004401 |
| 2 | -.021886 | -.066790 | .118083 | -.047464 | .048592 | .029681 |
| 3 | -.020860 | -.025468 | .078846 | -.075822 | .032574 | -.009559 |
| 4 | .055308 | -.066310 | .029926 | -.028447 | -.025036 | .019117 |
| 5 | .015371 | -.062132 | .069694 | -.062958 | -.001574 | -.052408 |
| 6 | .046574 | .038430 | .037915 | -.010212 | -.020102 | -.062650 |
| 7 | .062322 | .021933 | .019541 | -.050384 | -.059111 | -.021446 |
| 8 | .089472 | .036159 | -.039277 | -.026533 | -.073684 | .008231 |
| 9 | .081228 | -.028488 | -.031881 | -.052099 | -.025325 | .008314 |
| 10 | .068985 | -.025802 | -.038307 | -.088729 | .037106 | .002416 |
| 11 | .101801 | -.015445 | -.059906 | -.044965 | -.071372 | .014131 |
| 12 | .084415 | -.013741 | -.025339 | -.065859 | -.014778 | -.030135 |
| 13 | .072497 | .004183 | -.000035 | -.052635 | .045760 | -.022331 |
| 14 | .076765 | -.014592 | -.027207 | -.042710 | .018289 | .050419 |
| 15 | .084544 | -.016139 | -.081361 | -.015006 | -.012022 | .040626 |
| 16 | .105767 | -.004273 | -.111259 | .026957 | -.033310 | .007493 |
| 17 | .058476 | .010938 | -.034465 | -.057442 | .024854 | -.019895 |
| 18 | .028863 | -.014813 | -.031284 | .031619 | .020466 | -.010027 |
| 19 | -.047299 | -.038184 | .029926 | -.131587 | .054341 | -.019654 |
| 20 | .008457 | .000246 | .013517 | -.015759 | .022422 | .001462 |
| 21 | .004169 | -.039408 | .027771 | -.000958 | -.015817 | -.020003 |
| 22 | .066984 | -.027985 | .009485 | .061418 | -.047563 | -.035000 |
| 23 | .011968 | -.019591 | -.041061 | .014934 | -.043282 | -.023532 |
| 24 | -.018386 | -.045307 | .022565 | .053276 | -.016178 | -.050700 |
| 25 | -.009357 | -.020001 | -.020773 | .021087 | .000990 | -.001121 |
| 26 | -.038439 | .047152 | -.081533 | .012646 | -.001400 | .016755 |
| 27 | -.007026 | .025830 | -.081445 | .070171 | -.025305 | .035541 |
| 28 | -.020521 | .004347 | -.120653 | .042191 | -.027145 | .022583 |
| 29 | -.057213 | -.026161 | -.046833 | .067391 | .051869 | .020546 |
| 30 | -.049060 | -.026018 | .003058 | .067624 | -.043429 | -.008991 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-03 | 10E-03 | 10E-03 | 10E-03 | 10E-04 |
| 1 | .334341 | -.416848 | -.223645 | -.841262 | -.116617 | -.392789 |
| 2 | .143469 | -.201264 | .199379 | -.499926 | -.105323 | -.303283 |
| 3 | -.021169 | -.262320 | .596615 | -.188395 | -.053874 | -.594030 |
| 4 | -.065640 | -.352551 | .606210 | -.102062 | .114731 | -.332179 |
| 5 | -.032938 | -.398769 | .408999 | -.087446 | .194496 | .242438 |
| 6 | -.031369 | -.530567 | .450380 | -.182902 | .199399 | .288642 |
| 7 | -.049008 | -.471824 | .356448 | -.293448 | .217324 | .411871 |
| 8 | -.012125 | -.285418 | .105443 | -.106988 | .120737 | .698708 |
| 9-11 | -.019675 | .047463 | .323564 | -.037167 | .098330 | .184472 |
| 12-14 | -.019556 | -.178728 | .292084 | -.027948 | .143361 | -.260519 |
| 15-21 | .016183 | -.209678 | .140496 | -.001986 | .055482 | .025948 |
| 22-30 | -.022404 | .035535 | .123719 | -.105059 | .060029 | -.411615 |

RUN NO 92A 46M 6-19-63 0030-0146(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.84820 10E-01 | 0.36341 10E-01 | 0.11403 10E-01 | 0.50141 10E-02 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .282129 | .253597 | .031905 | .411185 |
| 2 | .070507 | .240386 | -.001455 | .036719 |
| 3 | .001888 | .195099 | -.076596 | -.110112 |
| 4 | -.096016 | .142293 | -.068689 | -.045383 |
| 5 | -.010922 | .100237 | .041118 | .008495 |
| 6 | .037675 | .122443 | .020999 | -.025803 |
| 7 | .005678 | .075503 | -.045020 | .017501 |
| 8 | -.024873 | .023907 | -.079278 | .021682 |
| 9 | .008274 | .055312 | -.031580 | .034527 |
| 10 | .012638 | .064412 | -.069102 | -.029599 |
| 11 | -.104918 | -.092212 | -.109205 | -.037424 |
| 12 | -.031887 | -.057587 | -.001067 | .078932 |
| 13 | -.070552 | -.104906 | -.055864 | .051104 |
| 14 | -.011246 | -.153346 | .061823 | .016964 |
| 15 | -.048837 | -.120976 | .002493 | -.042178 |
| 16 | -.063274 | -.080232 | -.060399 | .004169 |
| 17 | .033875 | -.182828 | -.018319 | .025396 |
| 18 | -.000139 | -.170560 | .000388 | -.003784 |
| 19 | -.040881 | -.124861 | -.003601 | -.059165 |
| 20 | -.020001 | -.112422 | .043891 | -.048140 |
| 21 | -.070833 | -.098193 | -.050216 | -.100082 |
| 22 | -.127211 | -.090229 | -.029413 | -.107903 |
| 23 | -.108190 | -.117538 | -.003554 | -.060617 |
| 24 | -.059375 | -.167722 | .032171 | .010520 |
| 25 | -.166471 | -.079869 | -.060144 | -.112382 |
| 26 | -.117113 | -.145458 | -.071228 | -.183279 |
| 27 | .024129 | -.094823 | -.028003 | -.137133 |
| 28 | .023302 | -.099335 | .009807 | .039378 |
| 29 | .116702 | -.079784 | .020667 | .141830 |
| 30 | .020604 | -.034940 | .000146 | -.010057 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-02 | 10E-02 | 10E-03 | 10E-03 |
| 0 | .145591 | .130144 | .054981 | .130525 |
| 1 | .737594 | .650933 | .388943 | .486290 |
| 2 | .530210 | .414752 | .428288 | .261228 |
| 3 | .480199 | .209917 | .521893 | .245391 |
| 4 | .451984 | .110834 | .482889 | .316868 |
| 5 | .380694 | .120180 | .371796 | .315581 |
| 6 | .465229 | .140382 | .325307 | .304807 |
| 7 | .530243 | .130231 | .376157 | .320904 |
| 8 | .478834 | .115405 | .511427 | .323901 |
| 9-11 | .401908 | .091726 | .552931 | .297901 |
| 12-14 | .304667 | .101640 | .519943 | .230875 |
| 15-21 | .274224 | .122161 | .434476 | .122791 |
| 22-30 | .303120 | .165839 | .684277 | .115244 |

RUN NO 92A 15M 6-19-63 0030-0146(EST)
 RUN NO 92A 46M 6-19-63 0030-0146(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .281139 | .261768 | .054757 | .171512 |
| 1 | .129183 | .057682 | .161798 | .181221 |
| 2 | .086592 | .093511 | .140865 | .163859 |
| 3 | .140019 | .070304 | .124695 | .160034 |
| 4 | .158606 | .124888 | .146259 | .125107 |
| 5 | .125758 | .263457 | .188734 | .205446 |
| 6 | .139445 | .184430 | .212970 | .193375 |
| 7-8 | .168916 | .104689 | .151951 | .184532 |
| 9-11 | .125986 | .139157 | .108293 | .073712 |
| 12-15 | .073289 | .100364 | .139978 | .105243 |
| 16-20 | .075797 | .095499 | .112767 | .082425 |
| 21-27 | .110376 | .077847 | .071179 | .125058 |
| 28-36 | .070196 | .079177 | .091399 | .113874 |
| 37-47 | .115957 | .098186 | .127778 | .112944 |
| 48-60 | .093501 | .111183 | .096061 | .081702 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .787614 | .898197 | .379136 | .665654 |
| 1 | .672022 | .875908 | .342711 | .603433 |
| 2 | .466978 | .728553 | .050520 | .338628 |
| 3 | .285961 | .462210 | .101860 | .128421 |
| 4 | .390257 | .473062 | .180696 | .288452 |
| 5 | .498002 | .148673 | .232144 | .380594 |
| 6 | .410308 | .136715 | .480569 | .345538 |
| 7 | .321871 | .254304 | .186404 | .225823 |
| 8 | .232178 | .161430 | .128460 | .255993 |
| 9-11 | .124523 | .347263 | .287764 | .241558 |
| 12-14 | .164766 | .159913 | .265873 | .220261 |
| 15-21 | .255489 | .187007 | .308412 | .251759 |
| 22-30 | .162047 | .391944 | .189085 | .315619 |

RUN NO 94A 46M 6-19-63 1306-1422(EST)

GROSS STATISTICS

| | | | | |
|----------|----------------|-------------|---------|----------|
| CLEAR | WIND SPEED | 4.97 M/SEC | SIGMA A | 12.0 DEG |
| UNSTABLE | WIND DIRECTION | 203 DEG | SIGMA E | 10.9 DEG |
| | SOLAR RAD. | 1.27 LY/MIN | | |

| | | | | |
|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|
| WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN | 10 PT BLOCK AVG |
|-------------------------|--------------------------------|-------------------------------|-----------------|-----------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.16498E 01 | 0.12598E 01 | 0.73778E 00 | 0.91344E 00 |
| V | 0.98723E 00 | 0.77059E 00 | 0.70188E 00 | 0.42433E-00 |
| W | 0.65828E 00 | 0.61879E 00 | 0.48072E-00 | 0.35656E-00 |
| T | 0.28169E-00 | 0.66095E-01 | 0.34261E-01 | 0.51646E-01 |
| E | 0.16476E 01 | 0.13250E 01 | 0.96020E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.25844 | 0.22583 | 0.17283 | 0.19230 |
| V | 0.19992 | 0.17663 | 0.16857 | 0.13107 |
| W | 0.16325 | 0.15828 | 0.13950 | 0.12015 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.22794E-00 | -0.13621E-00 | -0.87528E-01 | -0.10415E-00 |
| U,W | -0.49076E-00 | -0.38242E-00 | -0.17461E-00 | -0.31572E-00 |
| U,T | -0.36216E-00 | -0.20199E-00 | -0.91992E-01 | -0.16652E-00 |
| V,W | 0.16190E-01 | 0.29940E-01 | 0.15289E-01 | 0.25935E-01 |
| V,T | 0.22441E-00 | 0.48392E-01 | 0.38391E-01 | 0.32891E-01 |
| W,T | 0.78202E-01 | 0.62822E-01 | 0.19442E-01 | 0.56334E-01 |
| WE | 0.11735E-00 | 0.77237E-01 | 0.71373E-02 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.17861 | -0.13825 | -0.12163 | -0.16729 |
| U,W | -0.47093 | -0.43314 | -0.29320 | -0.55322 |
| U,T | -0.53126 | -0.70000 | -0.57861 | -0.76665 |
| V,W | 0.02008 | 0.04336 | 0.02632 | 0.06667 |
| V,T | 0.42555 | 0.21443 | 0.24757 | 0.22218 |
| W,T | 0.18160 | 0.31064 | 0.15149 | 0.41513 |

RUN NO 94A 46M 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.71960 10E 00 | 0.59563 10E 00 | 0.15903 10E 00 | 0.58990 10E 00 | 0.15510 10E 00 | 0.12838 10E 00 |
| 0 | -.121531 | -.293347 | -.578657 | .026342 | .247424 | .151632 |
| 1 | -.118251 | -.270749 | -.532522 | .027356 | .223507 | .146303 |
| 2 | -.098602 | -.230832 | -.451659 | .024863 | .180795 | .131120 |
| 3 | -.076032 | -.187310 | -.374523 | .023484 | .140318 | .112117 |
| 4 | -.056717 | -.145008 | -.305062 | .020535 | .109564 | .098405 |
| 5 | -.041376 | -.112411 | -.245330 | .013772 | .083170 | .084460 |
| 6 | -.024977 | -.086724 | -.195282 | .011012 | .060107 | .073508 |
| 7 | -.012558 | -.070583 | -.152249 | .013637 | .042069 | .070029 |
| 8 | -.002588 | -.054854 | -.111682 | .012944 | .030709 | .067658 |
| 9 | .002329 | -.035019 | -.076616 | .008828 | .019291 | .062378 |
| 10 | .003018 | -.016765 | -.645675 | .005632 | .006036 | .051837 |
| 11 | .000018 | -.006431 | -.015087 | .004354 | -.003659 | .036362 |
| 12 | -.009265 | .000630 | .012938 | .000640 | -.013068 | .019609 |
| 13 | -.024209 | .008349 | .040028 | -.002274 | -.017826 | .003617 |
| 14 | -.034812 | .024663 | .069681 | .000433 | -.020770 | -.010411 |
| 15 | -.037898 | .044143 | .097041 | .006544 | -.026924 | -.021235 |
| 16 | -.033419 | .057806 | .125595 | .010935 | -.033700 | -.029466 |
| 17 | -.024629 | .064490 | .153356 | .012851 | -.044552 | -.037504 |
| 18 | -.012946 | .067690 | .179344 | .014414 | -.058703 | -.041496 |
| 19 | .003983 | .070858 | .198867 | .007378 | -.073145 | -.045849 |
| 20 | .022424 | .079223 | .209452 | .000016 | -.084796 | -.049346 |
| 21 | .032761 | .083700 | .209836 | -.007683 | -.091625 | -.051780 |
| 22 | .040043 | .084459 | .207613 | -.016696 | -.094939 | -.054883 |
| 23 | .040912 | .091166 | .204564 | -.018442 | -.089913 | -.053626 |
| 24 | .035644 | .095321 | .196818 | -.014056 | -.078728 | -.056988 |
| 25 | .036134 | .095628 | .196228 | -.009911 | -.068635 | -.061976 |
| 26 | .040075 | .094299 | .201275 | -.010570 | -.063215 | -.063554 |
| 27 | .051320 | .090978 | .202140 | -.017513 | -.060478 | -.061294 |
| 28 | .062619 | .076503 | .191382 | -.028946 | -.059207 | -.058116 |
| 29 | .073748 | .061739 | .171906 | -.035397 | -.057389 | -.056393 |
| 30 | .077136 | .050045 | .142366 | -.037510 | -.051199 | -.059207 |
| 31 | .070836 | .035910 | .111971 | -.036903 | -.039809 | -.055183 |
| 32 | .062305 | .018650 | .083958 | -.034909 | -.027220 | -.047282 |
| 33 | .055727 | .004954 | .055390 | -.027222 | -.019460 | -.044020 |
| 34 | .046385 | -.011815 | .028503 | -.015139 | -.013963 | -.038249 |
| 35 | .037084 | -.017788 | .003870 | -.007272 | -.012633 | -.033113 |
| 36 | .027398 | -.014351 | -.017280 | -.002741 | -.012419 | -.029657 |
| 37 | .020754 | -.008791 | -.033419 | -.004882 | -.010631 | -.020097 |
| 38 | .017505 | -.009346 | -.042669 | -.006704 | -.006908 | -.007958 |
| 39 | .019430 | -.006904 | -.049719 | -.006795 | -.006624 | .000485 |
| 40 | .024232 | -.003701 | -.058575 | -.008156 | -.006641 | .003239 |
| 41 | .030677 | .002437 | -.068791 | -.011024 | -.007166 | .002962 |
| 42 | .031920 | .010162 | -.077194 | -.014929 | -.010249 | .004181 |
| 43 | .028446 | .011552 | -.085107 | -.018341 | -.012439 | .005517 |
| 44 | .021161 | .005361 | -.089924 | -.019212 | -.009688 | .009139 |
| 45 | .010424 | .002678 | -.092295 | -.009917 | -.005012 | .011233 |
| 46 | -.002280 | .000119 | -.091181 | -.003189 | -.000849 | .013190 |
| 47 | -.012310 | -.004025 | -.085368 | -.001532 | .001420 | .016675 |
| 48 | -.018874 | -.004813 | -.075546 | .004741 | .007112 | .017925 |
| 49 | -.020392 | -.032253 | -.059954 | .006426 | .012121 | .009452 |
| 50 | -.020714 | .000955 | -.039978 | .004063 | .017024 | .002350 |
| 51 | -.019793 | .004348 | -.024173 | .002248 | .019751 | -.005157 |
| 52 | -.017920 | .013804 | -.012403 | .000230 | .019990 | -.012736 |
| 53 | -.021809 | .027383 | -.005749 | .002164 | .024463 | -.027043 |
| 54 | -.024960 | .037052 | -.001101 | .005925 | .030291 | -.036290 |
| 55 | -.027400 | .037000 | .004583 | .007046 | .032420 | -.037319 |
| 56 | -.030257 | .037263 | .011645 | .004928 | .030584 | -.037725 |
| 57 | -.027777 | .041697 | .021804 | .004119 | .027125 | -.036116 |
| 58 | -.025634 | .047215 | .032028 | .010209 | .023363 | -.030433 |
| 59 | -.028639 | .048765 | .043887 | .016310 | .023827 | -.026665 |
| 60 | -.030493 | .046099 | .053197 | .021096 | .029922 | -.024406 |

RUN NO 94A 46M 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.71960 10E 00 | 0.59563 10E 00 | 0.15903 10E 00 | 0.58090 10E 00 | 0.15510 10E 00 | 0.12838 10E 00 |
| 1 | -.000134 | -.037068 | -.041645 | .003338 | .011347 | -.006580 |
| 2 | .002475 | -.062859 | -.059484 | .002799 | .016680 | -.005650 |
| 3 | .004251 | -.075493 | -.071527 | .001842 | .012101 | -.002491 |
| 4 | -.000164 | -.084212 | -.083923 | -.001810 | .003759 | -.004285 |
| 5 | -.009156 | -.092544 | -.093787 | -.002047 | -.005418 | -.010712 |
| 6 | -.023164 | -.100003 | -.103263 | -.005673 | -.015371 | -.021024 |
| 7 | -.035489 | -.106356 | -.116523 | -.006763 | -.029895 | -.030512 |
| 8 | -.041206 | -.109683 | -.123349 | -.006960 | -.038996 | -.035643 |
| 9 | -.042131 | -.107141 | -.123997 | -.003565 | -.043405 | -.040903 |
| 10 | -.033116 | -.102859 | -.121409 | .003128 | -.043550 | -.048881 |
| 11 | -.025007 | -.094036 | -.117906 | .014567 | -.042279 | -.055931 |
| 12 | -.020940 | -.080707 | -.115807 | .034759 | -.041426 | -.058756 |
| 13 | -.017332 | -.073071 | -.111741 | .045206 | -.036314 | -.057797 |
| 14 | -.014062 | -.065451 | -.108170 | .047156 | -.027472 | -.047925 |
| 15 | -.014473 | -.053694 | -.102755 | .049561 | -.017666 | -.035916 |
| 16 | -.015164 | -.043052 | -.095495 | .052324 | -.010591 | -.025813 |
| 17 | -.012483 | -.029655 | -.087339 | .045377 | -.007602 | -.012678 |
| 18 | -.011495 | -.014008 | -.075206 | .034010 | -.002576 | -.002354 |
| 19 | -.010569 | -.006751 | -.059212 | .022532 | .000585 | .003607 |
| 20 | -.012930 | -.000958 | -.044137 | .009294 | -.000559 | .009809 |
| 21 | -.014890 | .008769 | -.029045 | .004050 | -.006666 | .015342 |
| 22 | -.015882 | .008925 | -.018731 | .007229 | -.013922 | .021913 |
| 23 | -.017492 | .006155 | -.008904 | .006643 | -.018469 | .023690 |
| 24 | -.017545 | .000336 | -.002307 | .006875 | -.015628 | .019020 |
| 25 | -.013495 | .000471 | -.002985 | .006438 | -.007581 | .013887 |
| 26 | -.006719 | .002509 | .012088 | .006800 | .002049 | .008993 |
| 27 | .003477 | .007841 | .024372 | .007202 | .008402 | .010062 |
| 28 | .009671 | .020237 | .035838 | .002197 | .012837 | .017221 |
| 29 | .014758 | .031527 | .044635 | -.003396 | .014647 | .025844 |
| 30 | .026919 | .036681 | .049313 | -.003608 | .017279 | .029449 |
| 31 | .039905 | .035685 | .054865 | -.000131 | .023058 | .029651 |
| 32 | .044461 | .032274 | .057545 | -.001764 | .028243 | .027294 |
| 33 | .043426 | .029191 | .057278 | -.000402 | .029798 | .027202 |
| 34 | .036240 | .027085 | .053254 | .001331 | .027350 | .034881 |
| 35 | .025844 | .024547 | .049428 | -.001245 | .027041 | .043494 |
| 36 | .021861 | .017311 | .047578 | -.005154 | .028663 | .046364 |
| 37 | .022284 | .009653 | .041240 | -.016627 | .031921 | .041897 |
| 38 | .021788 | .012194 | .035345 | -.025199 | .032602 | .039191 |
| 39 | .017978 | .012408 | .027774 | -.026597 | .029010 | .038247 |
| 40 | .013043 | .010318 | .019648 | -.021910 | .021671 | .033355 |
| 41 | .005601 | .003978 | .016749 | -.018742 | .011589 | .026445 |
| 42 | -.004676 | -.002364 | .017759 | -.021245 | .002003 | .014870 |
| 43 | -.012796 | -.006076 | .013482 | -.029988 | -.006859 | .000458 |
| 44 | -.019020 | .001703 | .002610 | -.034761 | -.010675 | -.003468 |
| 45 | -.019646 | .010324 | -.008552 | -.036295 | -.007356 | -.001256 |
| 46 | -.015360 | .016252 | -.022718 | -.033802 | -.001123 | .007490 |
| 47 | -.006186 | .019013 | -.036818 | -.029738 | .006304 | .015105 |
| 48 | .003046 | .021985 | -.046436 | -.026878 | .009436 | .020126 |
| 49 | .007018 | .026310 | -.050347 | -.026109 | .011815 | .016155 |
| 50 | .006679 | .027473 | -.053298 | -.014220 | .011822 | .010362 |
| 51 | .003893 | .025380 | -.057578 | -.011186 | .010017 | .012771 |
| 52 | .000324 | .022304 | -.058920 | -.013058 | .001162 | .013176 |
| 53 | -.005523 | .019836 | -.055910 | -.016175 | -.006634 | .012829 |
| 54 | -.010036 | .019471 | -.050008 | -.017483 | -.008611 | .013127 |
| 55 | -.013123 | .018917 | -.043406 | -.017588 | -.010757 | .008869 |
| 56 | -.011694 | .016959 | -.038219 | -.013962 | -.006902 | .006358 |
| 57 | -.008550 | .011671 | -.038027 | -.007345 | .000424 | .007417 |
| 58 | -.004543 | .010576 | -.034322 | -.000279 | .005829 | .006787 |
| 59 | -.001075 | .014712 | -.028362 | -.004837 | .012994 | .006726 |
| 60 | .003397 | .016061 | -.018285 | .010497 | .018885 | .007520 |

RUN NC 94A 46M 6-19-63 1306-1422(EST)
 61 PCINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.73784 10E 00 | 0.70180 10E 00 | 0.48092 10E 00 | 0.34276 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .851903 | .839604 | .804731 | .882313 |
| 2 | .663349 | .625410 | .567334 | .729753 |
| 3 | .509953 | .460771 | .388973 | .600758 |
| 4 | .388749 | .336576 | .267625 | .492928 |
| 5 | .291940 | .244658 | .179645 | .399264 |
| 6 | .213519 | .171477 | .112170 | .317896 |
| 7 | .149672 | .113249 | .048955 | .246346 |
| 8 | .088332 | .063510 | -.006477 | .177541 |
| 9 | .036845 | .014989 | -.042021 | .111500 |
| 10 | -.003388 | -.033884 | -.060208 | .050577 |
| 11 | -.044155 | -.080427 | -.066421 | -.004964 |
| 12 | -.083105 | -.115628 | -.073090 | -.056698 |
| 13 | -.121645 | -.140498 | -.084788 | -.106463 |
| 14 | -.154410 | -.162317 | -.108275 | -.151733 |
| 15 | -.184428 | -.186122 | -.131389 | -.187154 |
| 16 | -.210814 | -.208109 | -.147490 | -.227646 |
| 17 | -.231537 | -.224742 | -.152556 | -.269224 |
| 18 | -.250795 | -.239314 | -.161335 | -.306840 |
| 19 | -.259779 | -.252764 | -.174070 | -.336738 |
| 20 | -.262108 | -.264558 | -.197511 | -.357834 |
| 21 | -.255222 | -.276111 | -.205580 | -.369333 |
| 22 | -.247399 | -.283976 | -.200442 | -.369691 |
| 23 | -.241762 | -.281132 | -.200139 | -.365431 |
| 24 | -.234804 | -.273973 | -.210287 | -.359830 |
| 25 | -.234608 | -.262291 | -.225502 | -.353089 |
| 26 | -.232890 | -.248482 | -.225582 | -.344744 |
| 27 | -.229091 | -.230257 | -.208379 | -.333086 |
| 28 | -.214512 | -.211571 | -.176784 | -.306016 |
| 29 | -.186561 | -.188024 | -.136939 | -.273869 |
| 30 | -.145637 | -.147985 | -.091246 | -.231429 |
| 31 | -.098288 | -.099753 | -.053343 | -.186241 |
| 32 | -.052440 | -.057800 | -.032277 | -.139487 |
| 33 | -.014717 | -.023716 | -.015945 | -.095058 |
| 34 | .016259 | -.003138 | -.003479 | -.052724 |
| 35 | .040867 | .009810 | .007904 | -.012421 |
| 36 | .052699 | .021078 | .011256 | .025384 |
| 37 | .060518 | .029801 | .020916 | .056434 |
| 38 | .060716 | .036327 | .026044 | .080738 |
| 39 | .058152 | .039326 | .018825 | .106611 |
| 40 | .060887 | .045669 | .012849 | .129447 |
| 41 | .064383 | .054656 | .016997 | .149363 |
| 42 | .062810 | .059853 | .019779 | .168177 |
| 43 | .062997 | .060427 | .020951 | .186972 |
| 44 | .064029 | .061155 | .012137 | .199277 |
| 45 | .069939 | .063627 | -.002782 | .205171 |
| 46 | .076038 | .058780 | -.007043 | .199248 |
| 47 | .077671 | .053242 | -.001748 | .181546 |
| 48 | .070863 | .050035 | .005308 | .162062 |
| 49 | .057359 | .049487 | .012952 | .137631 |
| 50 | .037656 | .051987 | .016012 | .111831 |
| 51 | .015869 | .058675 | .015652 | .086550 |
| 52 | -.001272 | .067249 | .016882 | .064840 |
| 53 | -.007779 | .070810 | .019670 | .048521 |
| 54 | -.013786 | .070462 | .024869 | .038367 |
| 55 | -.022873 | .066044 | .029439 | .027420 |
| 56 | -.037475 | .066704 | .027336 | .011539 |
| 57 | -.056062 | .074891 | .024876 | -.010752 |
| 58 | -.076583 | .079980 | .019957 | -.033221 |
| 59 | -.091479 | .080628 | .012415 | -.051349 |
| 60 | -.098323 | .077045 | .006521 | -.067424 |

RUN NO 94A 46W 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|----------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 0 | -.019180 | -.048208 | -.019491 | .027553 | .049593 | .078121 |
| 1 | -.215160 | -.318367 | -.153042 | .607419 | .584229 | .549473 |
| 2 | -.208479 | -.345472 | -.200138 | .592837 | .740569 | .554571 |
| 3 | -.097580 | -.345067 | -.203438 | .209125 | .712608 | .436224 |
| 4 | -.005998 | -.194066 | -.097864 | -.077766 | .407053 | .158328 |
| 5 | -.039015 | -.078691 | -.041760 | .046927 | .189423 | .057710 |
| 6 | -.089804 | -.079758 | -.041006 | .234781 | .162516 | .041151 |
| 7-8 | -.086432 | -.079108 | -.031846 | .083156 | .200504 | .009591 |
| 9-11 | -.028046 | -.045733 | -.023719 | -.031974 | .105882 | .042318 |
| 12-15 | -.004489 | -.020845 | -.009468 | .067245 | .063362 | .033930 |
| 16-20 | -.006274 | -.014006 | -.005920 | -.026812 | .026210 | .000908 |
| 21-27 | -.001876 | -.001085 | -.002785 | -.016979 | .018203 | .003640 |
| 28-36 | .001111 | -.002606 | -.001664 | .016358 | .007899 | .000968 |
| 37-47 | .001189 | -.001807 | -.000790 | -.008367 | .002709 | -.001974 |
| 48-60 | .001172 | -.000859 | -.000382 | -.005095 | .001963 | .000397 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | -.338822 | -.119962 | -.539323 | .560078 | -.069143 | .005167 |
| 2 | -.771198 | -.179190 | -.719676 | .688798 | -.180382 | -.175890 |
| 3 | -.816029 | -.212732 | -.770968 | .282615 | -.184990 | -.229594 |
| 4 | -.133955 | -.159462 | -.348983 | -.150497 | -.051089 | -.108263 |
| 5 | .034688 | -.090515 | -.095922 | -.319297 | -.006252 | -.019913 |
| 6 | -.302956 | -.057778 | -.069556 | -.457671 | -.014096 | .032737 |
| 7-8 | .097852 | -.013473 | -.046010 | -.142179 | .084896 | .089952 |
| 9-11 | .233913 | -.013860 | -.034256 | .235917 | .064778 | .000075 |
| 12-15 | .112683 | -.005690 | -.011089 | -.006217 | .018627 | -.006125 |
| 16-20 | -.058219 | -.008796 | -.024997 | -.010428 | .006185 | -.003615 |
| 21-27 | -.018833 | -.002711 | -.010361 | .013675 | .005206 | -.007338 |
| 28-36 | -.006076 | -.000274 | -.009946 | .007953 | -.000526 | -.000802 |
| 37-47 | -.006310 | -.000105 | -.004102 | .000094 | -.000726 | -.001466 |
| 48-60 | .003311 | -.000201 | -.001291 | .007074 | -.001138 | .000177 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-00 | 10E-01 | 10E-02 |
| 0 | .011304 | .003792 | .040713 | .052676 |
| 1 | .088200 | .067945 | .448207 | .486321 |
| 2 | .117602 | .107989 | .611563 | .711478 |
| 3 | .132355 | .121912 | .676549 | .749685 |
| 4 | .082016 | .075468 | .451004 | .360692 |
| 5 | .044140 | .041182 | .276075 | .160823 |
| 6 | .038914 | .037471 | .284306 | .152606 |
| 7-8 | .029939 | .032617 | .270601 | .116907 |
| 9-11 | .021637 | .020003 | .162225 | .075659 |
| 12-15 | .011908 | .014181 | .093309 | .043510 |
| 16-20 | .007623 | .008535 | .073541 | .027347 |
| 21-27 | .004601 | .005009 | .042858 | .016348 |
| 28-36 | .002882 | .002950 | .023948 | .010563 |
| 37-47 | .001718 | .001799 | .015787 | .006563 |
| 48-60 | .001261 | .001061 | .011094 | .004508 |

RUN NC 94A 46M 6-19-63 1306-1422(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.62232 10E 00 | 0.57055 10E 00 | 0.21719 10E 00 | 0.38878 10E 00 | 0.14799 10E 00 | 0.13568 10E 00 |
| 0 | -.167358 | -.553371 | -.766702 | .066707 | .222246 | .415190 |
| 1 | -.091004 | -.365444 | -.530262 | .011071 | .086812 | .329709 |
| 2 | -.027378 | -.190934 | -.286085 | -.025034 | -.024201 | .197649 |
| 3 | .065457 | -.064695 | -.145399 | -.068317 | -.057514 | .083323 |
| 4 | .057646 | .026347 | -.075039 | -.066441 | -.059418 | .025302 |
| 5 | .039527 | .090839 | .043862 | -.027335 | -.052835 | -.031063 |
| 6 | .012805 | .157534 | .155846 | .013829 | -.024330 | -.082646 |
| 7 | .001060 | .128923 | .214095 | .051329 | -.028924 | -.080163 |
| 8 | -.040662 | .110428 | .185679 | .038008 | -.005746 | -.104171 |
| 9 | -.077918 | .096363 | .188309 | .082828 | .067827 | -.113210 |
| 10 | -.016657 | .107519 | .168605 | .041751 | .034224 | -.130944 |
| 11 | .028562 | .120817 | .145705 | .013459 | -.001230 | -.153536 |
| 12 | .061682 | .104592 | .114815 | .005632 | -.039318 | -.138217 |
| 13 | .024534 | .055610 | .088426 | -.030544 | .003114 | -.086960 |
| 14 | .043978 | .040803 | .029562 | -.070046 | -.016553 | -.084617 |
| 15 | .034852 | -.035780 | -.035853 | -.060478 | .008808 | .001747 |
| 16 | .015341 | -.117878 | -.065433 | .041669 | .012763 | .087217 |
| 17 | -.062172 | -.132426 | -.105012 | .031458 | .052730 | .099595 |
| 18 | -.040460 | -.108934 | -.110040 | .013384 | .024888 | .070650 |
| 19 | -.003998 | -.073002 | -.063136 | .017662 | .005979 | .060298 |
| 20 | .004760 | .005632 | -.034786 | -.005808 | .000692 | .013039 |
| 21 | -.011524 | .017203 | .024842 | -.025663 | -.030665 | .005403 |
| 22 | .021746 | .060208 | .058081 | -.036737 | -.070313 | -.009802 |
| 23 | -.023703 | .081228 | .052816 | .006315 | -.017488 | -.023059 |
| 24 | -.065739 | .046125 | .038475 | .033393 | .067994 | .014178 |
| 25 | -.058647 | -.013918 | .052777 | -.019974 | .048636 | .043470 |
| 26 | -.031367 | .013229 | .020822 | .010940 | .034612 | .010277 |
| 27 | .013137 | .019507 | .018736 | .023070 | -.038991 | -.025099 |
| 28 | .044759 | .016696 | .024327 | .033719 | -.054991 | -.042378 |
| 29 | .071451 | .010793 | .057127 | -.016169 | -.030376 | -.034182 |
| 30 | .010799 | .053233 | .060599 | .018635 | .006430 | -.062261 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-01 |
| 0 | -.011483 | -.042161 | -.035166 | .010259 | .017814 | .009771 |
| 1 | -.043312 | -.225179 | -.178717 | -.046456 | .030085 | .060964 |
| 2 | -.060398 | -.311063 | -.206110 | -.194972 | .024607 | .087036 |
| 3 | -.062117 | -.531985 | -.297830 | -.425965 | .103949 | .123107 |
| 4 | -.021963 | -.504250 | -.263506 | -.452134 | .201383 | .090827 |
| 5 | -.051008 | -.267921 | -.140891 | -.050895 | .247970 | .035586 |
| 6 | -.149526 | -.229042 | -.092595 | .682646 | .354655 | .029705 |
| 7 | -.215025 | -.275303 | -.084690 | .991958 | .456789 | .045380 |
| 8 | -.138876 | -.163558 | -.049918 | .498320 | .276597 | .030627 |
| 9-11 | -.040659 | -.065720 | -.039458 | .313044 | .147209 | .012587 |
| 12-14 | -.058401 | -.073162 | -.048476 | .054262 | .216825 | .009213 |
| 15-21 | .006799 | -.039414 | -.022196 | .040385 | .090943 | .002563 |
| 22-30 | -.022717 | -.038693 | -.013332 | .097805 | .048948 | .002539 |

RUN NC 94A 46M 6-19-63 1306-1422(EST)
 301 PCINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.62232 10E 00 | 0.57055 10E 00 | 0.21719 10E 00 | 0.38878 10E 00 | 0.14799 10E 00 | 0.13568 10E 00 |
| 1 | -.023379 | -.120194 | -.126774 | .052467 | -.016397 | -.022788 |
| 2 | .004208 | -.066489 | -.141052 | .075974 | .003197 | .020798 |
| 3 | .047276 | -.068898 | -.121514 | .034831 | .035765 | .046348 |
| 4 | .051455 | -.060309 | -.112746 | .015773 | .040867 | .025363 |
| 5 | .035149 | -.035372 | -.117666 | .012711 | .001592 | -.006057 |
| 6 | .021150 | -.058563 | -.073616 | .052532 | -.014350 | -.045744 |
| 7 | .032884 | -.069366 | -.013232 | .087729 | -.019009 | -.078203 |
| 8 | .013059 | -.047483 | .008238 | .049555 | -.011254 | -.086506 |
| 9 | .055738 | -.009089 | .002994 | -.005769 | .033973 | -.023005 |
| 10 | .044534 | .031507 | -.006228 | .033480 | .070193 | .019293 |
| 11 | .018833 | .076091 | .005264 | -.013939 | .052603 | .056362 |
| 12 | -.001934 | .040313 | .047955 | -.033290 | .013660 | .007660 |
| 13 | -.011070 | .051223 | .045931 | .014874 | -.005210 | .012414 |
| 14 | -.008455 | .126514 | .020326 | .005141 | -.006397 | .061284 |
| 15 | .015586 | .096706 | .021162 | .016536 | -.014343 | .048049 |
| 16 | .000792 | .058766 | .036335 | -.063677 | -.026747 | .045839 |
| 17 | -.025284 | .023135 | .003369 | -.048479 | -.037438 | .028263 |
| 18 | -.089277 | -.014488 | -.023265 | -.016445 | -.057896 | .044433 |
| 19 | -.101422 | -.007927 | -.068730 | -.004809 | -.042942 | .065866 |
| 20 | -.062888 | -.018851 | -.048314 | -.057946 | -.043887 | .048398 |
| 21 | -.028988 | -.016884 | -.007259 | -.062783 | -.043273 | .030743 |
| 22 | -.000113 | -.001208 | -.012972 | -.083964 | -.007998 | .036639 |
| 23 | .024666 | -.025706 | -.005960 | -.056620 | .052760 | -.001129 |
| 24 | .060351 | -.040156 | .014374 | .035608 | .084312 | -.063691 |
| 25 | .060709 | -.066376 | .005801 | .107277 | .080462 | -.046206 |
| 26 | .093516 | -.068724 | .018809 | .168716 | .021323 | -.041291 |
| 27 | .029021 | -.047119 | -.011438 | .103538 | .003216 | -.037141 |
| 28 | .001527 | .014113 | -.048675 | -.025578 | .037316 | .014597 |
| 29 | .020065 | .020591 | -.030248 | -.051041 | .039565 | .046520 |
| 30 | .019781 | .023818 | -.006456 | -.033682 | -.008141 | .046543 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .057524 | .038486 | -.381861 | .411740 | .055526 | .119916 |
| 2 | .112476 | -.076029 | -.483589 | .801380 | .139723 | -.128845 |
| 3 | .093119 | -.214756 | -.828425 | .741111 | .092121 | -.192207 |
| 4 | -.011108 | -.160614 | -.889694 | -.17310 | -.118536 | .050182 |
| 5 | .012097 | -.026987 | -.557988 | .219489 | -.013738 | .182003 |
| 6 | .017844 | .001475 | -.402159 | .028159 | .144779 | .228986 |
| 7 | -.021390 | -.045718 | -.406170 | .051571 | .127753 | .197193 |
| 8 | .018860 | -.057784 | -.217188 | .208770 | .101749 | .037695 |
| 9-11 | -.039537 | -.070147 | -.074782 | .454321 | -.120306 | -.132409 |
| 12-14 | -.023966 | -.015891 | -.236433 | .232217 | -.040342 | -.006683 |
| 15-21 | -.008991 | -.045157 | -.049694 | -.034928 | -.015894 | -.059958 |
| 22-30 | .002269 | -.015432 | -.033042 | -.080108 | -.006853 | .004000 |

RUN NO 94A 46M 6-19-63 1306-1422(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.91326 10E 00 | 0.42406 10E 00 | 0.35644 10E 00 | 0.51649 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .580211 | .212602 | .390094 | .654577 |
| 2 | .281996 | -.176348 | .109065 | .337021 |
| 3 | .145762 | -.218330 | .015428 | .178569 |
| 4 | .019325 | -.067273 | -.052788 | .132736 |
| 5 | -.112486 | -.050453 | -.098317 | -.000315 |
| 6 | -.235738 | -.024326 | -.093124 | -.155501 |
| 7 | -.251951 | -.066389 | -.127478 | -.248937 |
| 8 | -.212512 | -.028215 | -.092927 | -.212363 |
| 9 | -.193781 | .080868 | -.111248 | -.178381 |
| 10 | -.172936 | .101254 | -.213477 | -.192191 |
| 11 | -.175762 | -.009192 | -.151907 | -.204428 |
| 12 | -.124054 | -.127917 | -.113863 | -.187646 |
| 13 | -.064884 | -.098822 | -.216439 | -.148912 |
| 14 | -.008908 | -.127570 | -.116354 | -.076789 |
| 15 | .059517 | -.009959 | .063050 | -.019548 |
| 16 | .103375 | -.020487 | .098694 | .018370 |
| 17 | .149012 | .055407 | .124806 | .064934 |
| 18 | .135863 | .048706 | .110052 | .088881 |
| 19 | .070320 | .093730 | .071570 | .077281 |
| 20 | .020444 | -.078781 | .000525 | .026496 |
| 21 | -.040496 | -.060373 | -.040238 | -.043464 |
| 22 | -.041133 | -.060667 | -.026962 | -.083645 |
| 23 | -.069885 | .020794 | .035237 | -.043268 |
| 24 | -.089909 | .149162 | -.006957 | .003147 |
| 25 | -.058058 | .114435 | -.026231 | -.014883 |
| 26 | -.005863 | .084807 | -.021022 | -.002367 |
| 27 | -.009535 | -.023016 | -.047035 | .013161 |
| 28 | -.015357 | -.112626 | -.007233 | .003699 |
| 29 | -.048396 | -.096611 | .013991 | -.031955 |
| 30 | -.042677 | -.002967 | -.057770 | -.053140 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .013431 | .009331 | .017088 | .107262 |
| 1 | .069932 | .079406 | .163429 | .609301 |
| 2 | .087704 | .119299 | .270743 | .686712 |
| 3 | .140115 | .138752 | .406327 | .860863 |
| 4 | .134700 | .124922 | .327633 | .691730 |
| 5 | .078243 | .170235 | .169666 | .377511 |
| 6 | .055101 | .279618 | .182657 | .273344 |
| 7 | .052828 | .351483 | .260104 | .255758 |
| 8 | .034196 | .238298 | .208141 | .147840 |
| 9-11 | .020932 | .235237 | .140775 | .123427 |
| 12-14 | .027919 | .289140 | .109910 | .195761 |
| 15-21 | .018437 | .159253 | .116224 | .074492 |
| 22-30 | .013870 | .134014 | .089331 | .050866 |

RUN NO 94A 91M 6-19-63 1306-1422(EST)

GROSS STATISTICS

| | | |
|-------------------|------------------------|------------------|
| CLEAR UNSTABLE | WIND SPEED 6.17 M/SEC | SIGMA A 6.80 DEG |
| | WIND DIRECTION 207 DEG | SIGMA E 7.9 DEG |
| | SOLAR RAD. 1.27 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.12122E 01 | 0.10285E 01 | 0.74186E 00 | 0.75910E 00 |
| V | 0.79107E 00 | 0.63804E 00 | 0.57915E 00 | 0.35026E-00 |
| W | 0.57224E 00 | 0.56873E 00 | 0.51055E 00 | 0.29462E-00 |
| T | 0.16856E-00 | 0.33094E-01 | 0.21880E-01 | 0.21615E-01 |
| E | 0.12877E 01 | 0.11156E 01 | 0.91578E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.17844 | 0.16437 | 0.13960 | 0.14121 |
| V | 0.14415 | 0.12905 | 0.12334 | 0.09592 |
| W | 0.12260 | 0.12223 | 0.11581 | 0.08797 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.21759E-00 | -0.14694E-00 | -0.17613E-00 | -0.91401E-01 |
| U,W | -0.39297E-00 | -0.38853E-00 | -0.29544E-00 | -0.29531E-00 |
| U,T | -0.13969E-00 | -0.49503E-01 | -0.20528E-01 | -0.39678E-01 |
| V,W | 0.71690E-01 | 0.94417E-01 | 0.10282E-00 | 0.48888E-01 |
| V,T | 0.10213E-00 | -0.87299E-02 | -0.55873E-02 | -0.36643E-02 |
| W,T | -0.12004E-01 | -0.13840E-01 | -0.20709E-01 | -0.76308E-03 |
| WE | 0.21527E-00 | 0.16618E-00 | 0.75490E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.22221 | -0.18196 | -0.26870 | -0.17726 |
| U,W | -0.47183 | -0.50802 | -0.48006 | -0.62445 |
| U,T | -0.30904 | -0.26832 | -0.16112 | -0.30975 |
| V,W | 0.10655 | 0.15723 | 0.18909 | 0.15219 |
| V,T | 0.27968 | -0.06027 | -0.04963 | -0.04211 |
| W,T | -0.03865 | -0.10088 | -0.19593 | -0.00956 |

RUN NC 94A 91M 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.65548 10E 00 | 0.61550 10E 00 | 0.12743 10E 00 | 0.54369 10F 00 | 0.11256 10E 00 | 0.10570 10E 00 |
| 0 | -.268697 | -.479972 | -.160904 | .189151 | -.049835 | -.195883 |
| 1 | -.259758 | -.449889 | -.136568 | .177079 | -.044044 | -.171625 |
| 2 | -.232585 | -.393932 | -.103086 | .148039 | -.032306 | -.124665 |
| 3 | -.195939 | -.338748 | -.082505 | .116970 | -.020323 | -.079328 |
| 4 | -.161940 | -.286026 | -.069674 | .088192 | -.009478 | -.045768 |
| 5 | -.130119 | -.231265 | -.057990 | .057307 | .003084 | -.022417 |
| 6 | -.095175 | -.175982 | -.048785 | .022420 | .016011 | -.000846 |
| 7 | -.060214 | -.121065 | -.043707 | -.010579 | .027313 | .026100 |
| 8 | -.025158 | -.074778 | -.042410 | -.037214 | .038925 | .053528 |
| 9 | .006429 | -.034453 | -.038678 | -.061083 | .048570 | .075451 |
| 10 | .028617 | .002856 | -.028210 | -.080519 | .051372 | .090345 |
| 11 | .043749 | .034084 | -.014454 | -.091368 | .054871 | .095133 |
| 12 | .052923 | .062454 | -.005581 | -.092833 | .059309 | .089441 |
| 13 | .060906 | .092080 | -.000411 | -.083313 | .054755 | .080173 |
| 14 | .068242 | .122345 | -.002647 | -.070556 | .045015 | .064621 |
| 15 | .074978 | .148370 | .005908 | -.061399 | .032251 | .051661 |
| 16 | .079950 | .165606 | .011853 | -.055150 | .019576 | .046529 |
| 17 | .080820 | .177413 | .017401 | -.042551 | .010051 | .046609 |
| 18 | .078183 | .186066 | .023561 | -.028795 | .001376 | .040386 |
| 19 | .077452 | .188893 | .025526 | -.022798 | -.003585 | .032914 |
| 20 | .077610 | .187641 | .024265 | -.017312 | -.004318 | .028912 |
| 21 | .075503 | .181327 | .023497 | -.008146 | -.003113 | .027048 |
| 22 | .077042 | .179045 | .023270 | .001936 | -.003574 | .022130 |
| 23 | .079320 | .178178 | .023722 | .010097 | -.008634 | .016231 |
| 24 | .082475 | .175972 | .025637 | .010266 | -.018845 | .006421 |
| 25 | .083833 | .167073 | .029436 | .008728 | -.024287 | -.000696 |
| 26 | .084501 | .155655 | .032892 | .005416 | -.037096 | -.007460 |
| 27 | .084976 | .140512 | .038392 | -.000894 | -.039202 | -.012518 |
| 28 | .085198 | .121641 | .045459 | -.012286 | -.041067 | -.022724 |
| 29 | .081465 | .105077 | .049224 | -.019663 | -.037476 | -.040376 |
| 30 | .072314 | .086387 | .048595 | -.017443 | -.028700 | -.051080 |
| 31 | .061270 | .061336 | .047347 | -.009064 | -.019518 | -.048174 |
| 32 | .051624 | .038432 | .049738 | -.002226 | -.014271 | -.045732 |
| 33 | .046265 | .021526 | .050181 | -.002038 | -.011250 | -.040951 |
| 34 | .040975 | .006966 | .045214 | -.005160 | -.007826 | -.030643 |
| 35 | .031654 | -.002479 | .040980 | -.009527 | -.004642 | -.025174 |
| 36 | .022694 | -.010300 | .040307 | -.016477 | -.007704 | -.025188 |
| 37 | .017331 | -.015217 | .038640 | -.024208 | -.010502 | -.022513 |
| 38 | .017277 | -.022925 | .031194 | -.029451 | -.008822 | -.015232 |
| 39 | .018833 | -.030641 | .018534 | -.033096 | -.006393 | -.010322 |
| 40 | .021679 | -.031916 | .007943 | -.034012 | -.007137 | -.007351 |
| 41 | .023102 | -.032923 | .002638 | -.032131 | -.010503 | -.002054 |
| 42 | .018805 | -.033891 | -.000768 | -.024155 | -.012194 | .00473 |
| 43 | .011616 | -.033792 | -.008472 | -.015968 | -.013321 | .012164 |
| 44 | .004371 | -.033258 | -.015602 | -.014530 | -.014262 | .017500 |
| 45 | -.003804 | -.033112 | -.021034 | -.019625 | -.006900 | .018259 |
| 46 | -.012502 | -.033536 | -.027113 | -.023516 | -.02245 | .011377 |
| 47 | -.018273 | -.025860 | -.031246 | -.024076 | -.004723 | .011621 |
| 48 | -.027545 | -.016458 | -.030553 | -.013983 | -.005639 | .007128 |
| 49 | -.045498 | -.012808 | -.026653 | -.007263 | -.003400 | -.001557 |
| 50 | -.062073 | -.015190 | -.021591 | .030198 | -.002999 | -.009072 |
| 51 | -.072126 | -.019045 | -.014820 | .043332 | -.008814 | -.014259 |
| 52 | -.082673 | -.028648 | -.004390 | .051800 | -.011958 | -.013727 |
| 53 | -.091397 | -.037472 | .001804 | .061750 | -.010060 | -.016661 |
| 54 | -.095736 | -.041242 | .005808 | .068346 | -.003443 | -.016867 |
| 55 | -.092435 | -.041599 | .005999 | .072947 | .005810 | -.008686 |
| 56 | -.084304 | -.040356 | .006397 | .076265 | .011017 | -.002320 |
| 57 | -.074876 | -.042093 | .010375 | .074983 | .013410 | -.000919 |
| 58 | -.068973 | -.044793 | .017376 | .069782 | .013951 | .001003 |
| 59 | -.064871 | -.046010 | .023010 | .063817 | .015521 | .008874 |
| 60 | -.057987 | -.041305 | .025493 | .052647 | .018363 | .016909 |

RUN NO 94A 91M 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.65548 10E 00 | 0.61550 10E 00 | 0.12743 10E 00 | 0.54369 10E 00 | 0.11256 10E 00 | 0.10570 10E 00 |
| 1 | .007241 | -.013884 | -.012511 | .027494 | -.030337 | .017822 |
| 2 | .014321 | -.022794 | -.018264 | .049143 | -.050132 | .054426 |
| 3 | .017493 | -.024154 | -.028125 | .061487 | -.062503 | .091010 |
| 4 | .022470 | -.021562 | -.038584 | .074191 | -.068294 | .116528 |
| 5 | .032322 | -.021655 | -.046902 | .087902 | -.068244 | .126607 |
| 6 | .038348 | -.020498 | -.052691 | .098875 | -.068170 | .129604 |
| 7 | .042270 | -.017005 | -.058509 | .104881 | -.066541 | .131189 |
| 8 | .046484 | -.016133 | -.059724 | .106484 | -.064876 | .121846 |
| 9 | .050234 | -.024512 | -.057095 | .106414 | -.060361 | .108357 |
| 10 | .050417 | -.029027 | -.059099 | .109041 | -.052152 | .094964 |
| 11 | .046937 | -.028003 | -.064294 | .108723 | -.042742 | .088109 |
| 12 | .046966 | -.024556 | -.068507 | .109148 | -.037303 | .081353 |
| 13 | .050066 | -.022560 | -.067914 | .107104 | -.035136 | .070175 |
| 14 | .052734 | -.025595 | -.062903 | .102734 | -.034829 | .056659 |
| 15 | .055347 | -.029298 | -.055393 | .095161 | -.031284 | .045333 |
| 16 | .055982 | -.030715 | -.046064 | .086565 | -.028501 | .040786 |
| 17 | .053278 | -.025745 | -.041306 | .074841 | -.025196 | .041427 |
| 18 | .047243 | -.016750 | -.039656 | .057806 | -.021251 | .041449 |
| 19 | .042132 | -.009845 | -.037249 | .042723 | -.015307 | .034534 |
| 20 | .042055 | -.005795 | -.036690 | .030605 | -.005680 | .024009 |
| 21 | .045756 | -.004823 | -.038226 | .017676 | .007026 | .013966 |
| 22 | .050779 | -.007769 | -.039864 | .003607 | .021805 | .007906 |
| 23 | .053165 | -.012720 | -.039534 | -.007203 | .034808 | .001533 |
| 24 | .050677 | -.013604 | -.035892 | -.013427 | .046362 | -.000864 |
| 25 | .047198 | -.013773 | -.032226 | -.019515 | .053988 | -.005058 |
| 26 | .040052 | -.019194 | -.028927 | -.031719 | .057888 | -.016330 |
| 27 | .031181 | -.023225 | -.021025 | -.042395 | .059151 | -.030177 |
| 28 | .021190 | -.021385 | -.007824 | -.049361 | .062921 | -.040250 |
| 29 | .009698 | -.017562 | .003180 | -.053001 | .065228 | -.048585 |
| 30 | -.002832 | -.016822 | .010566 | -.049546 | .061469 | -.054966 |
| 31 | -.015695 | -.016711 | .021006 | -.042130 | .051396 | -.058887 |
| 32 | -.025058 | -.017754 | .032029 | -.033801 | .041774 | -.063525 |
| 33 | -.028078 | -.020287 | .042137 | -.027637 | .029380 | -.067502 |
| 34 | -.033324 | -.023099 | .051524 | -.023222 | .018305 | -.069075 |
| 35 | -.040070 | -.022292 | .061219 | -.019841 | .004570 | -.062821 |
| 36 | -.042145 | -.017101 | .065214 | -.016060 | -.005899 | -.050595 |
| 37 | -.044477 | -.010102 | .066080 | -.015162 | -.010799 | -.041804 |
| 38 | -.046016 | -.005654 | .066782 | -.006643 | -.021336 | -.040060 |
| 39 | -.045907 | -.004353 | .068038 | -.001593 | -.032985 | -.039408 |
| 40 | -.045110 | -.002207 | .067352 | -.005047 | -.041583 | -.039404 |
| 41 | -.049454 | .002948 | .062135 | -.004824 | -.049894 | -.042419 |
| 42 | -.054132 | .009509 | .056416 | -.001528 | -.052351 | -.038078 |
| 43 | -.052006 | .018577 | .047566 | -.011350 | -.045380 | -.027900 |
| 44 | -.047267 | .026768 | .035780 | -.014407 | -.038067 | -.018333 |
| 45 | -.041108 | .032959 | .024570 | -.011500 | -.032935 | -.014531 |
| 46 | -.035896 | .045047 | .015651 | -.012446 | -.030807 | -.008575 |
| 47 | -.031710 | .057842 | .009029 | -.017822 | -.026495 | -.001190 |
| 48 | -.029640 | .065098 | .004582 | -.025513 | -.022382 | .003261 |
| 49 | -.030497 | .068116 | .001501 | -.032947 | -.023176 | .012280 |
| 50 | -.029919 | .069629 | -.004408 | -.036988 | -.026810 | .019430 |
| 51 | -.024969 | .070678 | -.011072 | -.036659 | -.033190 | .025566 |
| 52 | -.019386 | .071124 | -.015793 | -.031310 | -.030732 | .028414 |
| 53 | -.015541 | .065385 | -.020450 | -.025744 | -.025917 | .027254 |
| 54 | -.010903 | .055243 | -.019162 | -.019403 | -.019624 | .024256 |
| 55 | -.007333 | .041585 | -.016931 | -.011140 | -.009459 | .018181 |
| 56 | -.005113 | .027173 | -.017721 | -.008658 | .000564 | .016541 |
| 57 | -.001879 | .017587 | -.020144 | -.013451 | .012313 | .021155 |
| 58 | .003312 | .009951 | -.019382 | -.020759 | .023351 | .027704 |
| 59 | .003455 | .004033 | -.014646 | -.025373 | .029140 | .027966 |
| 60 | .001125 | -.002796 | -.011253 | -.027795 | .035570 | .025737 |

RUN NO 94A 91M 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.74205 10E 00 | 0.57900 10E 00 | 0.51053 10E 00 | 0.21083 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .907563 | .847022 | .821568 | .851091 |
| 2 | .778850 | .630814 | .582221 | .647236 |
| 3 | .666435 | .460647 | .396926 | .484654 |
| 4 | .564156 | .326364 | .261061 | .351952 |
| 5 | .465605 | .214836 | .154821 | .236281 |
| 6 | .373181 | .126733 | .063497 | .137122 |
| 7 | .289503 | .052333 | -.014756 | .054124 |
| 8 | .209707 | -.011957 | -.074289 | -.016730 |
| 9 | .134282 | -.075169 | -.116731 | -.070276 |
| 10 | .065256 | -.131944 | -.147142 | -.111944 |
| 11 | -.000313 | -.176037 | -.167580 | -.136790 |
| 12 | -.062996 | -.205411 | -.177475 | -.150250 |
| 13 | -.126287 | -.216384 | -.180578 | -.161593 |
| 14 | -.189855 | -.214336 | -.182647 | -.170985 |
| 15 | -.246696 | -.211825 | -.186316 | -.178744 |
| 16 | -.293495 | -.216974 | -.180148 | -.189988 |
| 17 | -.330549 | -.222361 | -.173709 | -.198004 |
| 18 | -.358731 | -.218355 | -.170912 | -.207356 |
| 19 | -.378489 | -.211335 | -.169961 | -.216258 |
| 20 | -.389798 | -.199942 | -.170788 | -.222087 |
| 21 | -.397528 | -.189458 | -.166287 | -.228035 |
| 22 | -.402369 | -.180070 | -.163477 | -.225281 |
| 23 | -.399024 | -.168404 | -.164900 | -.216607 |
| 24 | -.388250 | -.160347 | -.161784 | -.204216 |
| 25 | -.367782 | -.155286 | -.153740 | -.191762 |
| 26 | -.345181 | -.152698 | -.142409 | .173346 |
| 27 | -.320693 | -.151315 | -.120835 | -.158388 |
| 28 | -.286126 | -.147836 | -.091521 | -.144424 |
| 29 | -.250725 | -.139725 | -.054652 | -.122400 |
| 30 | -.211146 | -.123199 | -.010188 | -.093640 |
| 31 | -.169881 | -.094928 | .026517 | -.059448 |
| 32 | -.132147 | -.059670 | .046978 | -.028111 |
| 33 | -.098924 | -.021869 | .048934 | -.007142 |
| 34 | -.069488 | .010215 | .039148 | .010110 |
| 35 | -.048646 | .033442 | .026969 | .026902 |
| 36 | -.030429 | .049965 | .025034 | .037228 |
| 37 | -.017984 | .060131 | .029771 | .039113 |
| 38 | -.004658 | .057648 | .030749 | .037017 |
| 39 | .015213 | .040823 | .023399 | .029208 |
| 40 | .037234 | .022413 | .004447 | .019451 |
| 41 | .057596 | .011143 | -.013532 | .014941 |
| 42 | .076143 | .009848 | -.027799 | .026745 |
| 43 | .093612 | .014294 | -.036522 | .045973 |
| 44 | .108054 | .021992 | -.025544 | .060742 |
| 45 | .116607 | .030943 | -.009297 | .074148 |
| 46 | .120141 | .036295 | .002185 | .088379 |
| 47 | .116875 | .042676 | .005037 | .100615 |
| 48 | .106024 | .053962 | .010097 | .102376 |
| 49 | .094574 | .060285 | .010751 | .098995 |
| 50 | .083129 | .062739 | .011308 | .088555 |
| 51 | .075001 | .068429 | .012103 | .069598 |
| 52 | .071901 | .067266 | .021190 | .044254 |
| 53 | .071898 | .051111 | .029977 | .027880 |
| 54 | .070920 | .035444 | .033411 | .020299 |
| 55 | .070293 | .028107 | .033479 | .010705 |
| 56 | .066792 | .022747 | .032737 | -.005227 |
| 57 | .059731 | .023880 | .037151 | -.023536 |
| 58 | .046361 | .024039 | .040915 | -.038168 |
| 59 | .037071 | .028486 | .034722 | -.050531 |
| 60 | .030353 | .035327 | .026086 | -.061299 |

RUN NO 94A 91M 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 0 | -.007298 | -.028914 | -.069786 | -.003788 | .016941 | .012050 |
| 1 | -.260721 | -.419749 | -.443167 | .059658 | .127409 | .035118 |
| 2 | -.387873 | -.635807 | -.414837 | .105184 | .074500 | -.077505 |
| 3 | -.379246 | -.717473 | -.281488 | .144952 | -.056529 | -.291071 |
| 4 | -.252846 | -.443652 | -.119292 | .193841 | -.177007 | -.394191 |
| 5 | -.179741 | -.206432 | -.127327 | .191108 | -.187892 | -.295633 |
| 6 | -.135479 | -.138403 | -.093015 | .136578 | -.117964 | -.210461 |
| 7-8 | -.070867 | -.090575 | -.039001 | .061624 | -.055816 | -.171193 |
| 9-11 | -.020703 | -.050337 | -.055046 | .013733 | -.004717 | -.041033 |
| 12-15 | -.004749 | -.016985 | -.042999 | .004052 | -.015018 | -.032010 |
| 16-20 | -.010227 | -.012591 | -.019909 | .006100 | -.001827 | -.038042 |
| 21-27 | -.001696 | -.009172 | -.017629 | .004120 | -.003956 | -.011882 |
| 28-36 | .000713 | .003957 | -.010055 | .000508 | -.002557 | -.002352 |
| 37-47 | .000816 | -.002054 | -.004369 | -.000134 | .000272 | -.002349 |
| 48-60 | .000007 | -.000598 | -.002267 | -.000162 | -.000047 | -.001087 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-02 | 10E-01 | 10E-02 | 10E-02 |
| 1 | .160977 | -.991865 | -.262457 | .152923 | -.039802 | .173785 |
| 2 | .186323 | -.725562 | -.390932 | .211041 | -.139679 | .383597 |
| 3 | .091975 | -.243023 | -.273280 | .233419 | -.331517 | .453644 |
| 4 | -.011358 | -.354409 | -.030784 | .139839 | -.251252 | .259112 |
| 5 | .008439 | -.250267 | -.058473 | .026334 | -.040336 | .163664 |
| 6 | .026933 | .021506 | -.076968 | -.003434 | -.037301 | .160134 |
| 7-8 | -.002621 | -.017135 | .015830 | .014320 | -.094468 | .093494 |
| 9-11 | .001449 | -.157543 | -.006754 | .010566 | -.027015 | .015597 |
| 12-15 | -.006228 | -.059830 | .002414 | .000238 | -.014343 | -.008093 |
| 16-20 | .003354 | -.031664 | .002912 | .002906 | -.010834 | -.015277 |
| 21-27 | .000976 | -.021737 | -.002219 | .003079 | -.000187 | -.009779 |
| 28-36 | .000425 | .005333 | -.003127 | .000241 | -.001772 | -.005052 |
| 37-47 | -.000995 | -.000801 | -.001669 | -.000489 | -.001610 | -.001975 |
| 48-60 | .000253 | -.001391 | -.001157 | -.000246 | .000331 | -.000724 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .009415 | .024783 | .022633 | .019342 |
| 1 | .118012 | .444207 | .328221 | .193725 |
| 2 | .167564 | .732570 | .521828 | .293102 |
| 3 | .172466 | .914971 | .704378 | .354943 |
| 4 | .093345 | .715893 | .613516 | .259027 |
| 5 | .040029 | .512763 | .421385 | .173412 |
| 6 | .025347 | .433556 | .356248 | .145973 |
| 7-8 | .021135 | .276827 | .314489 | .122102 |
| 9-11 | .013636 | .163844 | .159860 | .062705 |
| 12-15 | .007011 | .106825 | .102497 | .033783 |
| 16-20 | .004486 | .069147 | .068791 | .023628 |
| 21-27 | .002721 | .039136 | .043807 | .014288 |
| 28-36 | .001893 | .024287 | .023412 | .008894 |
| 37-47 | .001025 | .013334 | .014133 | .004955 |
| 48-60 | .000658 | .007136 | .008808 | .003075 |

RUN NO 94A 91M 6-19-63 1306-1422(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.51568 10E 00 | 0.47339 10E 00 | 0.12814 10E 00 | 0.32136 10E 00 | 0.86985 10E-01 | 0.79851 10E-01 |
| 0 | -.177245 | -.623820 | -.309650 | .152131 | -.042125 | -.009556 |
| 1 | .039709 | -.222593 | -.245070 | -.129196 | .052205 | .139288 |
| 2 | .097068 | .056363 | -.151075 | -.045330 | -.017127 | .075041 |
| 3 | .114794 | .065769 | -.049480 | -.036879 | -.032431 | -.007402 |
| 4 | .060803 | .036858 | -.003429 | -.042487 | -.025019 | .017995 |
| 5 | -.049920 | .052046 | .018518 | .065813 | -.034993 | -.016996 |
| 6 | -.061043 | .040102 | .093480 | .106449 | -.002480 | -.025161 |
| 7 | .024127 | .068389 | .088215 | -.018028 | .005183 | -.036371 |
| 8 | .032603 | .053369 | .035767 | -.034194 | -.006974 | -.044098 |
| 9 | -.016452 | .052673 | .064083 | -.019005 | .056622 | -.023305 |
| 10 | -.038369 | .055124 | .025831 | .007165 | .037900 | -.006846 |
| 11 | -.065466 | -.002935 | .007087 | -.004219 | .066551 | .026830 |
| 12 | -.056247 | .051954 | .005635 | .000108 | .038949 | -.005154 |
| 13 | -.084647 | .066035 | .041786 | .057043 | .039781 | -.010136 |
| 14 | -.095557 | .042619 | .058839 | .040680 | .028331 | .010064 |
| 15 | -.025549 | -.017962 | .091356 | .009638 | -.026462 | -.051757 |
| 16 | .044877 | -.084161 | .095820 | -.007224 | -.049357 | -.045518 |
| 17 | .068063 | -.012234 | .047712 | -.044798 | -.042340 | .024805 |
| 18 | .047759 | .022239 | .041599 | -.002383 | -.085753 | -.031180 |
| 19 | .065477 | .004232 | .034293 | .038816 | -.050296 | -.005244 |
| 20 | .043013 | .080047 | -.021793 | -.049243 | .065716 | .028860 |
| 21 | -.058278 | .007748 | -.021448 | .077139 | -.003719 | .000827 |
| 22 | -.070836 | -.042621 | -.026708 | .047517 | .028669 | -.005723 |
| 23 | -.038090 | -.027007 | -.057779 | .008895 | .042787 | -.027271 |
| 24 | -.019572 | .023701 | -.020609 | .006688 | -.019947 | -.021119 |
| 25 | .074768 | .001845 | -.020568 | -.028635 | .002547 | -.044806 |
| 26 | .114185 | -.022275 | -.045659 | -.119504 | -.036883 | .073477 |
| 27 | .022956 | -.040774 | -.007088 | .014544 | -.079372 | .033753 |
| 28 | .001682 | -.029489 | .012870 | .022626 | -.009906 | .030332 |
| 29 | .027780 | -.032978 | .013808 | -.048129 | -.008921 | -.017542 |
| 30 | .027558 | -.000656 | .018117 | -.044949 | -.008631 | -.029839 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 0 | -.000678 | -.006737 | -.042672 | -.016434 | .009131 | .014897 |
| 1 | .039087 | -.090594 | -.484989 | -.242841 | .015757 | .114233 |
| 2 | .086174 | -.142874 | -.637189 | -.280119 | -.050748 | .123654 |
| 3 | .101619 | -.204107 | -.663504 | -.257764 | -.114033 | .131624 |
| 4 | .015110 | -.212507 | -.527501 | -.254000 | -.034803 | .129965 |
| 5 | -.073898 | -.176106 | -.575932 | -.224295 | .136321 | .129114 |
| 6 | -.015786 | -.158966 | -.449823 | -.350650 | .119781 | .102976 |
| 7 | .037132 | -.192689 | -.160317 | -.405312 | -.000062 | .019485 |
| 8 | -.066043 | -.184044 | -.035244 | .108949 | .022050 | -.026907 |
| 9-11 | -.125844 | -.167233 | -.121529 | .505732 | .020123 | .017518 |
| 12-14 | -.100628 | -.143735 | -.079367 | .331392 | .000758 | -.013607 |
| 15-21 | -.028032 | -.110401 | -.002946 | .239706 | -.023744 | -.073309 |
| 22-30 | -.061510 | -.058291 | -.028753 | .710049 | -.086588 | -.088066 |

RUN NO 94A 91M 6-19-63 1306-1422(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.51568 10E 00 | 0.47339 10E 00 | 0.12814 10E 00 | 0.32136 10E 00 | 0.86985 10E-01 | 0.79851 10E-01 |
| 1 | .077405 | -.037516 | -.089398 | .193338 | -.057994 | .146213 |
| 2 | .090387 | -.053522 | -.090966 | .120649 | -.025418 | .037987 |
| 3 | .032449 | -.037690 | -.077515 | -.016590 | .029623 | .008562 |
| 4 | -.026614 | -.002553 | -.026539 | .013883 | -.057359 | -.019083 |
| 5 | -.041623 | .066332 | -.077766 | -.090050 | -.048597 | .031434 |
| 6 | -.014435 | .005056 | -.100125 | -.070121 | .000264 | .068866 |
| 7 | .030574 | -.047371 | -.079390 | .005780 | -.002232 | .041396 |
| 8 | -.010471 | -.015502 | -.081155 | -.025504 | -.053287 | .009527 |
| 9 | -.037077 | .056712 | -.073181 | -.002838 | -.090907 | .053854 |
| 10 | -.051015 | .013989 | -.005068 | -.011101 | -.027674 | -.017903 |
| 11 | .016945 | .005506 | .022728 | .027027 | -.002984 | .023275 |
| 12 | -.004795 | .011837 | .010003 | .003357 | -.025543 | .023941 |
| 13 | -.021231 | .020396 | .000090 | .004109 | .013819 | -.023202 |
| 14 | -.072196 | .006215 | .061056 | -.060652 | .023675 | -.081074 |
| 15 | -.035978 | .015628 | .075723 | -.055085 | .014580 | -.040087 |
| 16 | .004653 | -.015288 | .065693 | .023543 | -.060190 | -.041095 |
| 17 | .060413 | -.007024 | .014987 | .047221 | -.030621 | .018178 |
| 18 | .016845 | -.000586 | -.009391 | .006952 | .012100 | .030483 |
| 19 | -.028579 | -.045382 | .010103 | .045619 | .004465 | .014930 |
| 20 | -.001167 | -.021475 | .034026 | .011116 | -.027545 | -.054707 |
| 21 | .023422 | .005683 | -.016507 | -.066488 | .055106 | -.006986 |
| 22 | .038051 | -.001728 | .032275 | -.025292 | .088858 | .024526 |
| 23 | .013603 | -.029519 | -.067532 | .042062 | .011783 | -.005792 |
| 24 | -.008502 | -.029723 | -.008859 | .010914 | -.069837 | -.056099 |
| 25 | -.013472 | -.022351 | .026872 | -.002083 | -.033436 | -.042577 |
| 26 | -.009225 | -.009599 | -.009636 | -.013224 | -.008370 | -.007547 |
| 27 | -.024573 | .030226 | -.044028 | -.000368 | -.056479 | .056610 |
| 28 | -.019571 | .035427 | -.061650 | -.062473 | -.010046 | .086280 |
| 29 | -.034044 | -.013549 | -.018227 | -.021228 | -.037846 | -.001012 |
| 30 | -.049703 | -.008023 | -.041783 | -.019429 | -.023715 | .048664 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | -.436780 | .095232 | -.247369 | -.207182 | -.167818 | .054394 |
| 2 | +.209985 | .125564 | -.374115 | -.154576 | -.135537 | .111107 |
| 3 | .278061 | -.176786 | -.483712 | -.015125 | -.081292 | .134817 |
| 4 | .552876 | -.381407 | -.254323 | .189181 | -.019226 | .072399 |
| 5 | .363303 | -.240660 | -.010326 | .297977 | .009486 | -.011582 |
| 6 | .383878 | -.173896 | -.006344 | .506980 | .040942 | -.006362 |
| 7 | .638944 | -.282994 | -.066291 | .913144 | -.036603 | .071590 |
| 8 | .767983 | -.408148 | -.097584 | .973838 | -.102469 | .073031 |
| 9-11 | .757552 | -.566677 | -.164726 | .689386 | .005886 | .095565 |
| 12-14 | .251679 | .041464 | -.065203 | .377761 | -.015515 | .123433 |
| 15-21 | .011140 | .029037 | -.003804 | .453002 | -.080290 | .063570 |
| 22-30 | .027591 | .099305 | -.050171 | -.124205 | .029753 | .063642 |

RUN NO 94A 91M 6-19-63 1306-1422(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.75965 10E 00 | 0.35006 10E 00 | 0.29500 10E 00 | 0.21614 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .471965 | .048748 | .080739 | .463560 |
| 2 | -.002667 | -.095201 | -.103369 | .265968 |
| 3 | -.092785 | -.102787 | -.014516 | .188345 |
| 4 | -.070600 | -.083524 | -.115735 | .093085 |
| 5 | -.078009 | -.002007 | -.053025 | .067182 |
| 6 | -.124305 | .021851 | -.043323 | -.091398 |
| 7 | -.146663 | -.039101 | -.061434 | -.140874 |
| 8 | -.149554 | -.067901 | -.011168 | -.127192 |
| 9 | -.106989 | .022939 | -.044322 | -.176014 |
| 10 | -.062968 | -.008571 | -.052614 | -.174645 |
| 11 | -.041411 | -.029270 | -.035007 | -.162660 |
| 12 | -.068994 | .017251 | -.081883 | -.202136 |
| 13 | -.061440 | -.074273 | -.111862 | -.232186 |
| 14 | -.037607 | -.026174 | -.037745 | -.285804 |
| 15 | .017079 | .085942 | .055568 | -.169843 |
| 16 | .043146 | -.008275 | .139997 | -.144485 |
| 17 | -.006130 | -.091770 | .043647 | -.164526 |
| 18 | -.062060 | -.006023 | .021906 | -.111216 |
| 19 | -.069174 | .008859 | .038189 | -.036821 |
| 20 | -.057437 | -.054408 | -.166479 | .047613 |
| 21 | .022787 | -.032022 | -.044016 | .180544 |
| 22 | .108496 | .074958 | .028588 | .126053 |
| 23 | .101698 | .001059 | .032306 | .133207 |
| 24 | .024994 | -.024773 | -.060789 | .076733 |
| 25 | .025612 | -.092072 | .048212 | .103521 |
| 26 | .019042 | -.102454 | -.014977 | .093074 |
| 27 | .008747 | .007163 | .007202 | .061547 |
| 28 | -.001544 | -.022972 | .027589 | -.031745 |
| 29 | -.028532 | -.023846 | .047733 | -.043424 |
| 30 | -.069676 | .015907 | .068427 | .004073 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .031127 | .014853 | .004210 | .019886 |
| 1 | .309821 | .096455 | .053656 | .232335 |
| 2 | .479245 | .090136 | .085705 | .319464 |
| 3 | .658524 | .105108 | .136796 | .299440 |
| 4 | .678326 | .119711 | .144633 | .152215 |
| 5 | .629296 | .132201 | .100892 | .124854 |
| 6 | .492183 | .138105 | .108720 | .117608 |
| 7 | .459011 | .149113 | .177231 | .072958 |
| 8 | .468176 | .174849 | .163214 | .058735 |
| 9-11 | .416302 | .178198 | .120570 | .062052 |
| 12-14 | .370874 | .171766 | .120249 | .065779 |
| 15-21 | .204757 | .155825 | .144004 | .050905 |
| 22-30 | .104274 | .180870 | .142997 | .060547 |

RUN NO 94A 46M 6-19-63 1306-1422(EST)
 RUN NO 94A 91M 6-19-63 1306-1422(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .411878 | .040557 | .602783 | .343427 |
| 1 | .209842 | .476185 | .565861 | .058425 |
| 2 | .157488 | .498746 | .480032 | .054437 |
| 3 | .138641 | .491358 | .418507 | .053003 |
| 4 | .106769 | .474121 | .399986 | .092762 |
| 5 | .144735 | .372599 | .383665 | .129002 |
| 6 | .132188 | .198616 | .422368 | .071421 |
| 7-8 | .074166 | .208508 | .302777 | .140708 |
| 9-11 | .064879 | .124586 | .123231 | .103133 |
| 12-15 | .108545 | .118455 | .069742 | .088737 |
| 16-20 | .065532 | .088940 | .114255 | .072769 |
| 21-27 | .098437 | .095441 | .068222 | .089228 |
| 28-36 | .077449 | .100895 | .069387 | .068275 |
| 37-47 | .078256 | .094910 | .098814 | .108155 |
| 48-60 | .108315 | .101013 | .084998 | .109445 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .674608 | .422949 | .501001 | .240039 |
| 1 | .587960 | .537650 | .593138 | .257569 |
| 2 | .689220 | .402821 | .692734 | .440978 |
| 3 | .721359 | .247982 | .766711 | .568867 |
| 4 | .612033 | .069816 | .765989 | .565180 |
| 5 | .514775 | .167643 | .587336 | .516063 |
| 6 | .350216 | .395903 | .439463 | .472596 |
| | .097539 | .498114 | .567900 | .136163 |
| 8 | .161948 | .441057 | .677446 | .345405 |
| 9-11 | .283935 | .446836 | .634283 | .339296 |
| 12-14 | .106799 | .550829 | .351336 | .117150 |
| 15-21 | .244446 | .474900 | .437985 | .220524 |
| 22-30 | .196972 | .289401 | .347035 | .234290 |

RUN NO 95A 15M 6-19-63 1446-1602(EST)

GROSS STATISTICS

| | | |
|-------------------|------------------------|------------------|
| CLEAR UNSTABLE | WIND SPEED 4.15 M/SEC | SIGMA A 14.9 DEG |
| | WIND DIRECTION 211 DEG | SIGMA E 12.0 DEG |
| | SOLAR RAD. 0.91 LY/MIN | |

| | WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|
|--|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.19035E 01 | 0.16123E 01 | 0.10623E 01 | 0.11184E 01 |
| V | 0.97734E 00 | 0.81390E 00 | 0.68547E 00 | 0.46227E-00 |
| W | 0.50011E 00 | 0.47916E-00 | 0.43752E-00 | 0.18859E-00 |
| T | 0.24797E-00 | 0.99174E-01 | 0.43266E-01 | 0.81213E-01 |
| E | 0.16905E 01 | 0.14528E 01 | 0.10927E 01 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.33245 | 0.30597 | 0.24836 | 0.25483 |
| V | 0.23822 | 0.21739 | 0.19950 | 0.16383 |
| W | 0.17041 | 0.16680 | 0.15939 | 0.10464 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | -0.79183E-01 | 0.18317E-01 | 0.33315E-01 | -0.84905E-02 |
| U,W | -0.39790E-00 | -0.34648E-00 | -0.25208E-00 | -0.24392E-00 |
| U,T | -0.40883E-00 | -0.30259E-00 | -0.15487E-00 | -0.24356E-00 |
| V,W | 0.90410E-01 | 0.60340E-01 | 0.44375E-01 | 0.29135E-01 |
| V,T | -0.58506E-01 | -0.15083E-01 | -0.14740E-01 | -0.99527E-02 |
| W,T | 0.98864E-01 | 0.84165E-01 | 0.56382E-01 | 0.58843E-01 |
| WE | 0.14364E-00 | 0.14142E-00 | 0.12515E-00 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | -0.05805 | 0.01599 | 0.03904 | -0.01181 |
| U,W | -0.40782 | -0.39420 | -0.36974 | -0.53111 |
| U,T | -0.59507 | -0.75672 | -0.72237 | -0.80815 |
| V,W | 0.12932 | 0.09662 | 0.08103 | 0.09867 |
| V,T | -0.11884 | -0.05309 | -0.08559 | -0.05137 |
| W,T | 0.28074 | 0.38609 | 0.40980 | 0.47546 |

RUN NO 95A 15M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.85362 10E 00 | 0.68192 10E 00 | 0.21443 10E 00 | 0.54774 10E 00 | 0.17224 10E 00 | 0.13759 10E 00 |
| 0 | .039168 | -.369616 | -.722282 | .081151 | -.085615 | .409685 |
| 1 | .031351 | -.352583 | -.666952 | .052656 | -.078189 | .371497 |
| 2 | .015914 | -.297347 | -.566338 | .013760 | -.065619 | .295342 |
| 3 | .004025 | -.233437 | -.466001 | -.009466 | -.054486 | .220859 |
| 4 | -.003245 | -.176814 | -.377683 | -.017747 | -.044614 | .151119 |
| 5 | -.012779 | -.128992 | -.301769 | -.017974 | -.036956 | .114634 |
| 6 | -.016276 | -.093692 | -.241010 | -.006843 | -.030446 | .082376 |
| 7 | -.007963 | -.061319 | -.187691 | .005315 | -.026719 | .055509 |
| 8 | -.001173 | -.024127 | -.129336 | .013561 | -.019772 | .025395 |
| 9 | -.000394 | .014440 | -.070326 | .011051 | -.008516 | -.005196 |
| 10 | -.001830 | .042961 | -.020873 | .006907 | -.003842 | -.036324 |
| 11 | -.009201 | .062777 | .020821 | .010994 | .000044 | -.059880 |
| 12 | -.013425 | .072136 | .0505045 | .019002 | .008257 | -.078717 |
| 13 | -.018547 | .087408 | .086161 | .020123 | .018904 | -.094190 |
| 14 | -.023585 | .099239 | .113531 | .022304 | .023549 | -.108486 |
| 15 | -.023930 | .099828 | .135415 | .024954 | .027628 | -.112577 |
| 16 | -.020789 | .100592 | .150582 | .026101 | .031603 | -.109528 |
| 17 | -.023762 | .099939 | .165425 | .021797 | .035256 | -.104490 |
| 18 | -.033063 | .097608 | .176142 | .015065 | .041386 | -.098692 |
| 19 | -.032465 | .101255 | .185507 | .009016 | .043619 | -.097885 |
| 20 | -.024402 | .103336 | .195239 | .005645 | .042043 | -.100637 |
| 21 | -.015596 | .102005 | .206696 | .004244 | .039707 | -.097852 |
| 22 | -.011056 | .101759 | .212788 | .009186 | .042069 | -.093146 |
| 23 | -.007901 | .100239 | .221981 | .009140 | .043643 | -.084846 |
| 24 | -.002558 | .097556 | .230496 | .002568 | .042530 | -.083215 |
| 25 | .003575 | .091080 | .236131 | -.005019 | .037139 | -.089247 |
| 26 | .009980 | .085735 | .232712 | -.015411 | .027404 | -.094694 |
| 27 | .020497 | .081184 | .216602 | -.032441 | .010952 | -.094524 |
| 28 | .034267 | .078944 | .197009 | -.041809 | -.004415 | -.089561 |
| 29 | .046866 | .068616 | .178538 | -.041302 | -.013951 | -.078769 |
| 30 | .052407 | .063235 | .161869 | -.036847 | -.020949 | -.064335 |
| 31 | .051036 | .060756 | .145486 | -.032345 | -.025850 | -.047838 |
| 32 | .051085 | .055592 | .128504 | -.023782 | -.027992 | -.034685 |
| 33 | .052826 | .042479 | .112528 | -.025980 | -.028679 | -.021490 |
| 34 | .054919 | .022365 | .094635 | -.035335 | -.033425 | -.013873 |
| 35 | .049355 | .003034 | .075427 | -.047639 | -.039866 | -.008910 |
| 36 | .035066 | -.007908 | .055388 | -.043514 | -.039976 | -.003917 |
| 37 | .018912 | -.013442 | .037355 | -.034515 | -.027743 | .002654 |
| 38 | .008943 | -.017518 | .020891 | -.021036 | -.013011 | .009287 |
| 39 | .005594 | -.025526 | .007059 | -.019139 | -.003708 | .022450 |
| 40 | .005474 | -.028770 | -.003909 | -.013308 | -.001706 | .040761 |
| 41 | .012078 | -.032798 | -.010447 | -.003152 | -.006094 | .054046 |
| 42 | .017056 | -.038307 | -.014644 | -.006682 | -.016564 | .064020 |
| 43 | .016776 | -.046789 | -.019900 | -.019571 | -.026816 | .074016 |
| 44 | .010523 | -.049995 | -.023996 | -.013157 | -.028861 | .073165 |
| 45 | -.001006 | -.050669 | -.030303 | -.001197 | -.025343 | .067906 |
| 46 | -.010882 | -.049027 | -.041889 | .002826 | -.013805 | .062207 |
| 47 | -.017581 | -.044519 | -.054097 | .003153 | -.001276 | .062938 |
| 48 | -.017691 | -.040607 | -.064138 | .005319 | .007944 | .060605 |
| 49 | -.018538 | -.043720 | -.071392 | .006992 | .015795 | .062150 |
| 50 | -.017272 | -.049952 | -.078235 | .008179 | .024386 | .068432 |
| 51 | -.018111 | -.059427 | -.085353 | .007717 | .031814 | .076705 |
| 52 | -.018975 | -.066740 | -.087599 | .006276 | .034353 | .082527 |
| 53 | -.016561 | -.067849 | -.088661 | -.001567 | .031150 | .082658 |
| 54 | -.014986 | -.061170 | -.087994 | -.005004 | .028836 | .071948 |
| 55 | -.015769 | -.048880 | -.079301 | .003513 | .028830 | .054926 |
| 56 | -.020193 | -.035789 | -.059437 | .008492 | .032557 | .029343 |
| 57 | -.029125 | -.021596 | -.038103 | .017112 | .036652 | .002631 |
| 58 | -.035578 | -.011680 | -.027825 | .016408 | .039049 | -.015995 |
| 59 | -.038190 | .000114 | -.021413 | .018872 | .042843 | -.035265 |
| 60 | -.039535 | .013902 | -.011900 | .016477 | .046924 | -.056378 |

RUN NO 95A 15M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NU BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.85362 10E 00 | 0.68192 10E 00 | 0.21443 10E 00 | 0.54774 10E 00 | 0.17224 10E 00 | 0.13759 10E 00 |
| 1 | .007784 | -.030246 | -.077512 | .008094 | .007819 | .000777 |
| 2 | .014798 | -.040938 | -.113731 | .021077 | .015156 | .002562 |
| 3 | .022160 | -.046187 | -.130394 | .034615 | .026849 | .002769 |
| 4 | .027923 | -.054568 | -.138506 | .037654 | .034774 | .004085 |
| 5 | .025151 | -.059559 | -.144898 | .042399 | .034850 | .005966 |
| 6 | .026624 | -.054278 | -.147302 | .040234 | .036544 | .011987 |
| 7 | .031085 | -.052926 | -.147695 | .032744 | .035802 | .019298 |
| 8 | .030307 | -.058728 | -.150726 | .026259 | .029112 | .019168 |
| 9 | .021538 | -.059491 | -.146343 | .018107 | .018513 | .013884 |
| 10 | .011468 | -.052291 | -.135795 | .003478 | .007419 | .008578 |
| 11 | .003424 | -.036958 | -.123735 | -.000748 | .002253 | .012512 |
| 12 | -.003605 | -.026175 | -.115922 | .002215 | -.000927 | .014920 |
| 13 | -.005438 | -.028676 | -.107439 | -.002700 | -.002360 | .013681 |
| 14 | -.004142 | -.025452 | -.100827 | -.006242 | .000725 | .013443 |
| 15 | .000022 | -.019865 | -.096631 | -.007531 | .002741 | .019337 |
| 16 | .003989 | -.013060 | -.090585 | -.005057 | .004521 | .023422 |
| 17 | .003150 | -.004158 | -.084290 | -.008625 | .008002 | .026907 |
| 18 | .005485 | .007864 | -.078279 | -.010290 | .016761 | .035724 |
| 19 | .006709 | .010967 | -.072730 | -.006039 | .026226 | .045289 |
| 20 | .010031 | .008304 | -.072526 | .001711 | .031378 | .041212 |
| 21 | .016087 | .001180 | -.072120 | .011164 | .034642 | .030951 |
| 22 | .022689 | -.004509 | -.071847 | .012869 | .034853 | .015435 |
| 23 | .025553 | -.005396 | -.068266 | .011064 | .030447 | .007778 |
| 24 | .029904 | -.005473 | -.059434 | .013624 | .028485 | .003752 |
| 25 | .032942 | .004030 | -.047574 | .020479 | .033205 | .005503 |
| 26 | .039949 | .011074 | -.033497 | .025029 | .043016 | .009737 |
| 27 | .039965 | .008090 | -.017745 | .029355 | .050754 | .011778 |
| 28 | .033828 | .002488 | -.002331 | .032169 | .046622 | .003107 |
| 29 | .020593 | .002931 | .011862 | .025175 | .031936 | -.004322 |
| 30 | .006129 | .005673 | .023431 | .009429 | .019453 | -.005420 |
| 31 | .001817 | .006454 | .031886 | -.005844 | .012493 | -.008673 |
| 32 | .004851 | .005066 | .037683 | -.016103 | .012531 | -.017502 |
| 33 | .003578 | .000467 | .041552 | -.028154 | .010145 | -.023379 |
| 34 | -.001333 | .004755 | .044787 | -.035015 | .002670 | -.020016 |
| 35 | -.004852 | .015241 | .047554 | -.038285 | -.008035 | -.014964 |
| 36 | -.008474 | .019408 | .048338 | -.045772 | -.020413 | -.012264 |
| 37 | -.015552 | .017168 | .046451 | -.041437 | -.031069 | -.015420 |
| 38 | -.020541 | .019581 | .042102 | -.032972 | -.033392 | -.013986 |
| 39 | -.026634 | .021509 | .034482 | -.024042 | -.033539 | -.011513 |
| 40 | -.033161 | .014862 | .025946 | -.020022 | -.036209 | -.012186 |
| 41 | -.035889 | .006473 | .017403 | -.011984 | -.039728 | -.008021 |
| 42 | -.031081 | .010876 | .012410 | -.001831 | -.042942 | .001181 |
| 43 | -.023958 | .015883 | .008782 | .010498 | -.044929 | .005925 |
| 44 | -.009516 | .021219 | .006737 | .023868 | -.043072 | .012389 |
| 45 | .001242 | .025775 | .005494 | .020113 | -.037279 | .019394 |
| 46 | .008661 | .026014 | .007612 | .007403 | -.032374 | .021265 |
| 47 | .010932 | .021367 | .011922 | .006245 | -.030366 | .021429 |
| 48 | .009257 | .012073 | .010870 | .001509 | -.028151 | .019375 |
| 49 | .004869 | .003779 | .005556 | -.005784 | -.024196 | .017835 |
| 50 | .004503 | .000157 | -.000572 | -.004895 | -.018777 | .013517 |
| 51 | .008204 | -.001602 | -.005154 | .000737 | -.015718 | .011645 |
| 52 | .010611 | -.004713 | -.011344 | -.004620 | -.013581 | .012078 |
| 53 | .010825 | -.009885 | -.015012 | -.010367 | -.013264 | .008495 |
| 54 | .013687 | -.014024 | -.013483 | .000368 | -.012347 | .000598 |
| 55 | .013943 | -.026463 | -.007979 | .014337 | -.010922 | -.006406 |
| 56 | .015221 | -.031519 | -.005350 | .024396 | -.005421 | -.011229 |
| 57 | .012141 | -.031526 | -.002945 | .025095 | -.000516 | -.013110 |
| 58 | .002704 | -.030481 | -.000619 | .019494 | .003170 | -.012609 |
| 59 | -.000123 | -.027371 | -.000916 | .010905 | .006763 | -.007083 |
| 60 | -.000536 | -.019945 | .000079 | .004392 | .008649 | -.004273 |

RUN NO 95A 15M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.10627 10E 01 | 0.68565 10E 00 | 0.43757 10E 00 | 0.43267 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .853854 | .792386 | .696270 | .894536 |
| 2 | .667088 | .566994 | .398457 | .729548 |
| 3 | .523903 | .409795 | .225360 | .583360 |
| 4 | .413089 | .289303 | .100463 | .465774 |
| 5 | .322839 | .199814 | .017608 | .370818 |
| 6 | .249853 | .133298 | -.030017 | .294488 |
| 7 | .187888 | .090274 | -.061996 | .228128 |
| 8 | .121101 | .058848 | -.088834 | .159425 |
| 9 | .053407 | .0 229 | -.110086 | .090506 |
| 10 | -.004183 | -.018625 | -.120177 | .033006 |
| 11 | -.048594 | -.046994 | -.118344 | -.013387 |
| 12 | -.086366 | -.073948 | -.116812 | -.054733 |
| 13 | -.118470 | -.097305 | -.129082 | -.091242 |
| 14 | -.144634 | -.123313 | -.136023 | -.120602 |
| 15 | -.168349 | -.146405 | -.127560 | -.141392 |
| 16 | -.183154 | -.170134 | -.103831 | -.159420 |
| 17 | -.198920 | -.186842 | -.100141 | -.174195 |
| 18 | -.212562 | -.196714 | -.092994 | -.187690 |
| 19 | -.221045 | -.204293 | -.075465 | -.200181 |
| 20 | -.229025 | -.210049 | -.078509 | -.214468 |
| 21 | -.241970 | -.218466 | -.086483 | -.231225 |
| 22 | -.249368 | -.229899 | -.080938 | -.245964 |
| 23 | -.263208 | -.237129 | -.069774 | -.260695 |
| 24 | -.276681 | -.242736 | -.064040 | -.275049 |
| 25 | -.277336 | -.245153 | -.070263 | -.289625 |
| 26 | -.266974 | -.243752 | -.086954 | -.294741 |
| 27 | -.246239 | -.231459 | -.099254 | -.285147 |
| 28 | -.226586 | -.205323 | -.095558 | -.263574 |
| 29 | -.208498 | -.176677 | -.080549 | -.236770 |
| 30 | -.185973 | -.158269 | -.044562 | -.210652 |
| 31 | -.159260 | -.127965 | -.012314 | -.184331 |
| 32 | -.140394 | -.100298 | -.000233 | -.160663 |
| 33 | -.124178 | -.093036 | .007721 | -.143182 |
| 34 | -.103035 | -.082852 | .011859 | -.122520 |
| 35 | -.083746 | -.057260 | .007603 | -.095383 |
| 36 | -.066861 | -.035163 | .007586 | -.067776 |
| 37 | -.049203 | -.022700 | .005408 | -.046549 |
| 38 | -.029746 | -.012855 | .001986 | -.029338 |
| 39 | -.011108 | -.002413 | .002318 | -.015156 |
| 40 | .006711 | .011645 | .020969 | -.001906 |
| 41 | .015846 | .027186 | .042232 | .009366 |
| 42 | .013168 | .038990 | .057998 | .018173 |
| 43 | .017983 | .047515 | .059027 | .022862 |
| 44 | .020788 | .059293 | .057015 | .026837 |
| 45 | .026875 | .065915 | .036502 | .030439 |
| 46 | .034260 | .065565 | .013826 | .037015 |
| 47 | .043421 | .054908 | -.001152 | .045659 |
| 48 | .060649 | .032259 | -.000815 | .053763 |
| 49 | .073763 | .021733 | .004059 | .058970 |
| 50 | .084573 | .026420 | .015503 | .064729 |
| 51 | .091973 | .033655 | .019805 | .070405 |
| 52 | .090505 | .036064 | .022914 | .075916 |
| 53 | .092177 | .046281 | .029625 | .080238 |
| 54 | .093272 | .062527 | .029995 | .074793 |
| 55 | .086457 | .080531 | .021422 | .058520 |
| 56 | .075393 | .091103 | .008999 | .038682 |
| 57 | .061982 | .088372 | -.000645 | .019953 |
| 58 | .051977 | .086500 | -.020391 | .007974 |
| 59 | .047652 | .086267 | -.028665 | -.005239 |
| 60 | .041854 | .078832 | -.031635 | -.020247 |

RUN NO 95A 15M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|---------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-01 |
| 0 | .005757 | -.021513 | -.028113 | .043643 | -.042137 | .004608 |
| 1 | -.054578 | -.279202 | -.266039 | .656156 | -.168277 | .052660 |
| 2 | -.040746 | -.451443 | -.328237 | .473189 | -.242377 | .089793 |
| 3 | .075079 | -.519268 | -.308676 | -.158558 | -.410568 | .105803 |
| 4 | .107941 | -.348537 | -.173732 | -.358958 | -.279918 | .070811 |
| 5 | .012288 | -.242238 | -.104235 | .058191 | -.037582 | .051475 |
| 6 | -.028366 | -.195488 | -.085496 | .271504 | .011965 | .041219 |
| 7-8 | .020467 | -.109237 | -.056571 | .219228 | -.064223 | .022341 |
| 9-11 | .025184 | -.050154 | -.027278 | .271581 | -.019016 | .013797 |
| 12-15 | .020570 | -.033881 | -.019575 | .244179 | -.017963 | .011300 |
| 16-20 | .002110 | -.020656 | -.011622 | .175998 | -.014631 | .005618 |
| 21-27 | .001819 | -.000796 | -.003806 | .053784 | -.003802 | .001750 |
| 28-36 | .005277 | -.001441 | -.002651 | .056050 | -.005935 | .000934 |
| 37-47 | -.001109 | -.001325 | -.000965 | .023914 | -.000044 | .000435 |
| 48-60 | .000442 | -.001068 | -.000664 | .011869 | -.000711 | .000106 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .918582 | -.056881 | -.117647 | .187054 | .251988 | .142300 |
| 2 | .692406 | -.097516 | -.122579 | .345752 | .215812 | .135265 |
| 3 | .127919 | -.111717 | -.103913 | .259880 | .006504 | .089262 |
| 4 | -.023302 | -.096056 | -.051456 | .108251 | -.029367 | -.035284 |
| 5 | .679261 | -.084342 | -.036656 | .497096 | .148855 | -.050091 |
| 6 | .792174 | -.053712 | -.042930 | .725098 | .166998 | .012060 |
| 7-8 | .237724 | -.020370 | -.023716 | .142466 | .081081 | .024763 |
| 9-11 | .032657 | -.009718 | -.010514 | .117416 | .008006 | -.012523 |
| 12-15 | -.069970 | -.005757 | -.007357 | -.023592 | -.009698 | -.002842 |
| 16-20 | .058098 | -.010443 | -.006313 | -.014741 | -.002449 | .001018 |
| 21-27 | -.034387 | -.000570 | -.002586 | -.020198 | -.006256 | .001579 |
| 28-36 | -.001100 | -.005613 | -.001938 | -.005723 | -.000910 | -.001486 |
| 37-47 | .011595 | -.000617 | -.000592 | -.006836 | .003533 | -.000355 |
| 48-60 | -.009596 | -.000707 | -.000279 | .006205 | -.000681 | -.000347 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-00 | 10E-01 | 10E-02 |
| 0 | .013498 | .003635 | .015821 | .093549 |
| 1 | .147287 | .068832 | .183324 | .738776 |
| 2 | .188568 | .100046 | .295968 | .839279 |
| 3 | .182263 | .101838 | .395060 | .765156 |
| 4 | .108694 | .060700 | .350864 | .427267 |
| 5 | .068892 | .038932 | .310444 | .273135 |
| 6 | .058605 | .036828 | .302983 | .251757 |
| 7-8 | .042217 | .031198 | .239889 | .171292 |
| 9-11 | .022990 | .021831 | .171516 | .088134 |
| 12-15 | .017697 | .014614 | .122863 | .065459 |
| 16-20 | .012069 | .009454 | .082864 | .040809 |
| 21-27 | .006451 | .005616 | .053613 | .018186 |
| 28-36 | .004459 | .004205 | .041718 | .011252 |
| 37-47 | .002474 | .002828 | .029373 | .005409 |
| 48-60 | .001650 | .001785 | .017636 | .003484 |

RUN NO 95A 15M 6-19-63 1446-1602(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.71900 10E 00 | 0.45920 10E 00 | 0.30136 10E 00 | 0.29522 10E 00 | 0.19374 10E 00 | 0.12374 10E 00 |
| 0 | -.011809 | -.531181 | -.808182 | .096690 | -.051370 | .475542 |
| 1 | -.022941 | -.197139 | -.509153 | .053979 | -.005178 | .207128 |
| 2 | -.030978 | -.040367 | -.258988 | .036029 | .026933 | .093049 |
| 3 | .007309 | -.001668 | -.113979 | -.052705 | .041195 | .046086 |
| 4 | -.011794 | -.007550 | -.039740 | -.027666 | .047916 | .040162 |
| 5 | -.064436 | .010570 | .011797 | .004661 | .089937 | .002700 |
| 6 | -.053057 | .081611 | .063641 | .035523 | .080253 | -.088438 |
| 7 | -.040659 | .143709 | .139825 | .036227 | .053777 | -.153538 |
| 8 | -.005271 | .105442 | .142249 | -.004644 | -.010023 | -.112150 |
| 9 | .039696 | .017070 | .124569 | .029576 | -.005644 | -.055984 |
| 10 | .079050 | .033489 | .128838 | -.028803 | -.054931 | -.047740 |
| 11 | .045101 | .024084 | .134217 | -.070899 | -.041981 | -.056349 |
| 12 | .006648 | .032887 | .121414 | -.072058 | -.021925 | -.045323 |
| 13 | -.043581 | .025054 | .130728 | -.004625 | .024405 | -.019506 |
| 14 | .000629 | .015651 | .093656 | -.031112 | -.029744 | -.031987 |
| 15 | .053989 | .010451 | .029991 | -.002603 | -.052289 | -.012026 |
| 16 | .059495 | -.001892 | -.014564 | -.019482 | -.059052 | -.001774 |
| 17 | .022132 | -.033740 | -.008573 | .013444 | -.039195 | .058034 |
| 18 | -.007725 | -.008045 | .046476 | .001127 | -.019979 | .028825 |
| 19 | -.025225 | .006760 | .107240 | .011699 | .017339 | -.002024 |
| 20 | .007744 | .030742 | .135842 | -.021081 | -.027738 | -.048682 |
| 21 | .006258 | .018570 | .112123 | -.009171 | -.019376 | -.054707 |
| 22 | .024079 | .013581 | .100240 | .062685 | -.009329 | -.048107 |
| 23 | -.012141 | .084297 | .143924 | .037241 | .033100 | -.096470 |
| 24 | -.031514 | .113512 | .191175 | .048536 | .045830 | -.125219 |
| 25 | .019908 | .120459 | .165383 | -.004172 | .018543 | -.129176 |
| 26 | -.006189 | .074721 | .086676 | -.005673 | .009680 | -.066755 |
| 27 | -.041615 | .037929 | .027698 | .014995 | .037348 | -.015586 |
| 28 | -.027532 | -.050607 | -.040754 | .032042 | -.023416 | .023923 |
| 29 | .013200 | -.076214 | -.081610 | -.066718 | -.040753 | .062698 |
| 30 | .042227 | -.105381 | -.115624 | -.073380 | -.065147 | .107004 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|---------|
| | 10E-02 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 0 | -.134094 | -.011632 | -.033132 | .021427 | .073675 | .038838 |
| 1 | -.994938 | -.141352 | -.323713 | .222027 | .427578 | .476643 |
| 2 | -.977626 | -.159947 | -.322597 | .377909 | .334778 | .532816 |
| 3 | -.535329 | -.224250 | -.332751 | .331541 | .052995 | .716031 |
| 4 | .213188 | -.244875 | -.297811 | -.002307 | -.249089 | .732080 |
| 5 | .598633 | -.181499 | -.180552 | -.068005 | -.310952 | .441148 |
| 6 | .737381 | -.150896 | -.130670 | .118171 | -.343806 | .315334 |
| 7 | .612218 | -.109145 | -.139206 | .442019 | -.294129 | .225270 |
| 8 | -.156511 | -.064606 | -.110958 | .587928 | -.114833 | .075609 |
| 9-11 | -.710309 | -.086981 | -.082934 | .258673 | .054056 | .155687 |
| 12-14 | .078975 | -.139111 | -.068745 | .126954 | -.045814 | .305028 |
| 15-21 | .312603 | -.066341 | -.036360 | -.091622 | -.068601 | .127875 |
| 22-30 | -.101526 | -.065355 | -.028962 | .102576 | -.027510 | .156349 |

RUN NO 95A 15M 6-19-63 1445-1602(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.71900 10E 00 | 0.45920 10E 00 | 0.30136 10E 00 | 0.29522 10E 00 | 0.19374 10E 00 | 0.12374 10E 00 |
| 1 | .043544 | -.065418 | -.166291 | .047692 | .033893 | .042112 |
| 2 | .048373 | -.036142 | -.205795 | .034159 | .027002 | .066953 |
| 3 | .061073 | -.027657 | -.189813 | .057459 | .041396 | .050973 |
| 4 | .003358 | -.028914 | -.165492 | .006790 | -.014531 | .038241 |
| 5 | .004342 | -.019033 | -.141278 | .033005 | -.019442 | .044167 |
| 6 | -.010791 | -.033872 | -.104540 | .059524 | .012749 | .018497 |
| 7 | -.052315 | -.031848 | -.075757 | .022919 | .005952 | -.012689 |
| 8 | -.012521 | -.027215 | -.056869 | .022420 | .024694 | -.036216 |
| 9 | -.002558 | -.007825 | -.055978 | -.005531 | .016671 | -.017755 |
| 10 | -.022633 | -.010369 | -.050749 | .043556 | .001359 | -.015297 |
| 11 | .015729 | -.013767 | -.053269 | .038779 | .010389 | .009422 |
| 12 | .023533 | .069165 | -.030706 | .005762 | .004801 | .048860 |
| 13 | -.020119 | .011920 | -.018263 | -.050925 | -.002123 | .026123 |
| 14 | .015512 | .070721 | .003202 | -.001797 | .031499 | .039697 |
| 15 | -.006729 | .047537 | .010057 | -.035576 | .035906 | .044973 |
| 16 | -.006196 | .008199 | -.003796 | .000790 | .028160 | .019028 |
| 17 | -.016249 | -.009651 | -.009273 | -.014931 | .000692 | .016200 |
| 18 | .004251 | -.028376 | -.007298 | -.013336 | -.003649 | -.009993 |
| 19 | -.005738 | -.086535 | -.008455 | -.053739 | -.018643 | -.043081 |
| 20 | .002854 | -.007434 | -.000736 | .000449 | .004840 | .011190 |
| 21 | .027506 | .017749 | .004632 | .000279 | .027712 | .029740 |
| 22 | -.011746 | .024284 | -.005091 | -.005342 | -.013742 | .042143 |
| 23 | -.044230 | .009753 | .017346 | -.031032 | -.039524 | .028314 |
| 24 | .012470 | -.007117 | .025300 | .021685 | -.002162 | .013525 |
| 25 | .044009 | .008344 | .074697 | .075287 | -.003734 | -.014749 |
| 26 | .012345 | .029410 | .094864 | .022065 | -.024027 | -.020730 |
| 27 | -.042739 | .029019 | .123618 | -.046063 | -.041191 | -.067067 |
| 28 | -.088571 | .029365 | .103725 | -.042938 | -.055034 | -.056822 |
| 29 | .013401 | .012529 | .083136 | .020784 | -.008792 | -.041623 |
| 30 | .089815 | .036993 | .064289 | .119494 | .065018 | .005167 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-02 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 1 | -.010606 | -.156046 | -.167995 | .280118 | .198987 | .186525 |
| 2 | .001906 | -.380311 | -.158506 | .446779 | .104092 | .085675 |
| 3 | .020911 | -.756251 | -.150085 | .480962 | .007439 | .062748 |
| 4 | .041816 | -.694274 | -.128042 | .202339 | .035533 | .136367 |
| 5 | .079261 | -.001660 | -.096208 | .084568 | .082630 | .234930 |
| 6 | .103745 | .168584 | -.086090 | .117279 | .063696 | .232179 |
| 7 | .094350 | -.366898 | -.076946 | .160714 | .052092 | .062296 |
| 8 | .054457 | -.422411 | -.053835 | .171579 | .129046 | -.006878 |
| 9-11 | .018121 | -.204294 | -.027825 | .041564 | .131057 | .015428 |
| 12-14 | .007558 | -.224458 | -.022738 | .208180 | .021381 | .049208 |
| 15-21 | -.010608 | -.151452 | -.009679 | -.051227 | -.025895 | -.003117 |
| 22-30 | .027838 | -.086849 | -.003180 | .120441 | .065252 | -.002654 |

RUN NC 95A 15M 6-19-63 1446-1602(EST)
 301 PCINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.11184 10E 01 | 0.46224 10E 00 | 0.18854 10E 00 | 0.81207 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .518850 | .340064 | .106767 | .700908 |
| 2 | .175827 | -.017910 | .008936 | .443576 |
| 3 | .016188 | -.102146 | -.018815 | .245512 |
| 4 | -.054134 | -.030278 | -.036398 | .133732 |
| 5 | -.072347 | -.004825 | -.099963 | .027507 |
| 6 | -.077719 | .080833 | -.136671 | -.063275 |
| 7 | -.143672 | -.014834 | .152088 | -.150705 |
| 8 | -.147399 | -.114277 | -.023264 | -.156533 |
| 9 | -.100824 | -.119667 | -.000735 | -.170402 |
| 10 | -.086712 | -.067611 | -.026406 | -.188620 |
| 11 | -.108011 | -.075976 | -.106979 | -.218018 |
| 12 | -.104541 | -.160869 | -.091813 | -.205110 |
| 13 | -.132225 | -.127978 | -.022739 | -.210245 |
| 14 | -.090865 | -.121716 | -.024097 | -.169574 |
| 15 | .022396 | .006250 | .025207 | -.112992 |
| 16 | .077329 | .036303 | .000005 | -.063211 |
| 17 | .019756 | -.025666 | .126008 | -.062890 |
| 18 | -.063543 | -.053402 | .101402 | -.082235 |
| 19 | -.120231 | -.051650 | .027063 | -.135042 |
| 20 | -.140024 | .047483 | .059307 | -.160527 |
| 21 | -.095283 | .043654 | -.079167 | -.154882 |
| 22 | -.059560 | .035537 | -.030492 | -.165203 |
| 23 | -.108989 | -.045772 | -.122915 | -.219624 |
| 24 | -.187972 | -.001700 | -.117505 | -.253132 |
| 25 | -.142543 | .005827 | -.132176 | -.241032 |
| 26 | -.079732 | -.002725 | -.054539 | -.150687 |
| 27 | -.021155 | -.026893 | .038118 | -.069112 |
| 28 | .082275 | .040301 | .056270 | .007115 |
| 29 | .099673 | -.036181 | .023384 | .080097 |
| 30 | .120428 | -.031760 | .068382 | .138860 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-01 |
| 0 | .008836 | .030857 | .004584 | .015716 |
| 1 | .097283 | .264685 | .045244 | .143835 |
| 2 | .102405 | .327219 | .063919 | .137979 |
| 3 | .116021 | .354039 | .116647 | .127678 |
| 4 | .117089 | .243655 | .124546 | .099211 |
| 5 | .083597 | .168418 | .084617 | .055913 |
| 6 | .068189 | .193481 | .101020 | .042514 |
| 7 | .076354 | .256729 | .110120 | .042227 |
| 8 | .066573 | .294735 | .074014 | .030282 |
| 9-11 | .048275 | .299534 | .047743 | .019899 |
| 12-14 | .037170 | .202402 | .090904 | .017660 |
| 15-21 | .023929 | .150079 | .076950 | .008690 |
| 22-30 | .018750 | .117764 | .096700 | .008395 |

RUN NO 95A 46M 6-19-63 1446-1602(EST)

GROSS STATISTICS

| | | |
|-------------------|------------------------|------------------|
| CLEAR UNSTABLE | WIND SPEED 5.21 M/SEC | SIGMA A 11.1 DEG |
| | WIND DIRECTION 206 DEG | SIGMA E 9.8 DEG |
| | SOLAR RAD. 0.91 LY/MIN | |

| | | | |
|-------------------------|--------------------------------|-------------------------------|------------------------------------|
| WITH NO RUNNING MEAN | WITH 301 POINT RUNNING MEAN | WITH 61 POINT RUNNING MEAN | 301 PT RUN MEAN 10 PT BLOCK AVG |
|-------------------------|--------------------------------|-------------------------------|------------------------------------|

VARIANCES

| | | | | |
|---|-------------|-------------|-------------|-------------|
| U | 0.15302E 01 | 0.10412E 01 | 0.61476E 00 | 0.78171E 00 |
| V | 0.91754E 00 | 0.68834E 00 | 0.59033E 00 | 0.37946E-00 |
| W | 0.58483E 00 | 0.49041E-00 | 0.40471E-00 | 0.27227E-00 |
| T | 0.15485E-00 | 0.31187E-01 | 0.14120E-01 | 0.26106E-01 |
| E | 0.15163E 01 | 0.11101E 01 | 0.80490E 00 | |

GUSTINESS RATIOS

| | | | | |
|---|---------|---------|---------|---------|
| U | 0.23743 | 0.19586 | 0.15049 | 0.16970 |
| V | 0.18385 | 0.15924 | 0.14747 | 0.11823 |
| W | 0.14678 | 0.13441 | 0.12211 | 0.10015 |

COVARIANCES

| | | | | |
|-----|--------------|--------------|--------------|--------------|
| U,V | 0.11982E-00 | 0.12257E-00 | 0.54726E-01 | 0.93607E-01 |
| U,W | -0.42017E-00 | -0.25570E-00 | -0.13032E-00 | -0.20660E-00 |
| U,T | -0.22267E-00 | -0.12040E-00 | -0.51583E-01 | -0.10324E-00 |
| V,W | 0.61978E-02 | -0.12489E-01 | -0.11662E-01 | 0.30065E-02 |
| V,T | -0.14515E-00 | -0.21541E-01 | -0.90848E-02 | -0.18576E-01 |
| W,T | 0.51983E-01 | 0.17195E-01 | -0.92913E-03 | 0.18471E-01 |
| ME | 0.19793E-00 | 0.85943E-01 | 0.10894E-01 | |

NORMALIZED COVARIANCES

| | | | | |
|-----|----------|----------|----------|----------|
| U,V | 0.10112 | 0.14478 | 0.09084 | 0.17187 |
| U,W | -0.44416 | -0.35783 | -0.26126 | -0.44782 |
| U,T | -0.45744 | -0.66813 | -0.55365 | -0.72267 |
| V,W | 0.00846 | -0.02150 | -0.02386 | 0.00935 |
| V,T | -0.38509 | -0.14702 | -0.10827 | -0.18644 |
| W,T | 0.17274 | 0.13904 | -0.01229 | 0.21909 |

RUN NO 95A 46M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.60239 10E 00 | 0.49874 10E 00 | 0.93154 10E-01 | 0.48870 10E 00 | 0.91278 10E-01 | 0.75573 10E-01 |
| 0 | .090809 | -.261121 | -.553830 | -.023690 | -.107917 | -.012174 |
| 1 | .086247 | -.242249 | -.513333 | -.010496 | -.108234 | -.007568 |
| 2 | .074882 | -.203093 | -.444878 | .004096 | -.104661 | -.004509 |
| 3 | .057932 | -.164702 | -.374945 | .011084 | -.096805 | -.003796 |
| 4 | .039047 | -.126770 | -.309547 | .016565 | -.084850 | -.003991 |
| 5 | .020494 | -.091628 | -.255853 | .017513 | -.068734 | -.004485 |
| 6 | .009693 | -.063600 | -.207797 | .013487 | -.056444 | -.004098 |
| 7 | .007415 | -.047171 | -.163117 | .012588 | -.052470 | -.005166 |
| 8 | .011997 | -.033979 | -.119320 | .006981 | -.049441 | -.005741 |
| 9 | .017114 | -.024481 | -.078640 | -.002919 | -.044324 | -.002244 |
| 10 | .018731 | -.014361 | -.045555 | -.012410 | -.034427 | .003248 |
| 11 | .014004 | -.001973 | -.013458 | -.020846 | -.023200 | .008134 |
| 12 | .006032 | .015095 | .016196 | -.027586 | -.009367 | .008784 |
| 13 | -.006180 | .031458 | .044700 | -.028193 | .002170 | .008885 |
| 14 | -.016309 | .044822 | .073575 | -.029250 | .010736 | .007995 |
| 15 | -.022859 | .053880 | .104004 | -.025494 | .022589 | .002792 |
| 16 | -.028866 | .063253 | .134218 | -.018883 | .032497 | -.005383 |
| 17 | -.037902 | .069791 | .159387 | -.011288 | .039654 | -.012323 |
| 18 | -.043740 | .076795 | .175995 | -.006394 | .049742 | -.014396 |
| 19 | -.041555 | .082985 | .185532 | -.003416 | .058041 | -.013683 |
| 20 | -.036068 | .082871 | .191439 | .002254 | .060369 | -.014449 |
| 21 | -.033641 | .082040 | .195112 | .009378 | .061943 | -.010414 |
| 22 | -.031080 | .082207 | .194623 | .010854 | .064201 | .000138 |
| 23 | -.029789 | .076755 | .191718 | .012751 | .067961 | .016766 |
| 24 | -.021723 | .067940 | .188692 | .014986 | .069995 | .033297 |
| 25 | -.013283 | .063684 | .183474 | .010841 | .070175 | .041440 |
| 26 | -.007337 | .060911 | .172351 | .003130 | .069106 | .047404 |
| 27 | -.002986 | .055313 | .158489 | -.000741 | .064306 | .048913 |
| 28 | -.005219 | .046945 | .136898 | -.004923 | .054759 | .051710 |
| 29 | .018547 | .033870 | .109446 | -.000542 | .043679 | .057894 |
| 30 | .028754 | .015743 | .082659 | .005589 | .034127 | .058884 |
| 31 | .031138 | .003358 | .056357 | .003303 | .032042 | .058185 |
| 32 | .019300 | -.004505 | .028617 | .003740 | .037632 | .058971 |
| 33 | .006233 | -.010504 | .005164 | .003469 | .038572 | .060064 |
| 34 | -.002005 | -.014610 | -.012513 | .004450 | .037486 | .052012 |
| 35 | -.006171 | -.018202 | -.021065 | .006544 | .035366 | .044276 |
| 36 | -.007544 | -.023455 | -.023814 | .005560 | .030560 | .044964 |
| 37 | -.012595 | -.028295 | -.022181 | .004424 | .024994 | .046692 |
| 38 | -.019273 | -.028390 | -.017585 | .003235 | .020133 | .041001 |
| 39 | -.021999 | -.028853 | -.011192 | .003392 | .014247 | .032904 |
| 40 | -.019077 | -.030221 | -.008148 | -.004369 | .012300 | .026584 |
| 41 | -.015716 | -.026056 | -.004618 | -.017011 | .010535 | .022176 |
| 42 | -.008319 | -.017002 | .003909 | -.028058 | .003739 | .011709 |
| 43 | .004921 | -.009393 | .014872 | -.037727 | -.008283 | -.001991 |
| 44 | .017146 | -.000751 | .020795 | -.039271 | -.022789 | -.010799 |
| 45 | .026028 | .006434 | .020156 | -.030378 | -.036102 | -.016992 |
| 46 | .030729 | .014172 | .014836 | -.016639 | -.041694 | -.021031 |
| 47 | .031286 | .019241 | .010248 | -.005012 | -.042524 | -.021969 |
| 48 | .028173 | .022829 | .007824 | .006575 | -.046235 | -.024007 |
| 49 | .019531 | .025215 | .007346 | .013328 | -.048673 | -.027504 |
| 50 | .004908 | .024627 | .005939 | .017791 | -.047793 | -.034369 |
| 51 | -.016153 | .021632 | .001134 | .027270 | -.042853 | -.039695 |
| 52 | -.029126 | .022079 | -.002470 | .035355 | -.036237 | -.046853 |
| 53 | -.031564 | .025325 | -.002310 | .033356 | -.035882 | -.056377 |
| 54 | -.028749 | .029764 | .001017 | .028403 | -.042247 | -.065352 |
| 55 | -.023390 | .036002 | .007149 | .021953 | -.046107 | -.074614 |
| 56 | -.023997 | .043089 | .012333 | .013765 | -.044499 | -.082689 |
| 57 | -.019239 | .041794 | .016647 | .012198 | -.044183 | -.083442 |
| 58 | -.014393 | .039374 | .017130 | .011577 | -.043863 | -.078659 |
| 59 | -.012646 | .036995 | .014904 | .005527 | -.040813 | -.077666 |
| 60 | -.007440 | .037760 | .011478 | -.001416 | -.039556 | -.078061 |

RUN NC 95A 46M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.60239 10E 00 | 0.49874 10E 00 | 0.93154 10E-01 | 0.48870 10E 00 | 0.91278 10E-01 | 0.75573 10E-01 |
| 1 | -0.00049 | -0.014544 | -0.025437 | .020702 | .001234 | -.023478 |
| 2 | -.000288 | -.030008 | -.029445 | .033006 | -.003684 | -.034869 |
| 3 | .002574 | -.041994 | -.035975 | .039685 | -.009512 | -.034679 |
| 4 | .006861 | -.058140 | -.043845 | .044232 | -.017116 | -.029302 |
| 5 | .014482 | -.066759 | -.053564 | .047656 | -.022502 | -.023752 |
| 6 | .019236 | -.068882 | -.066086 | .049331 | -.026374 | -.017749 |
| 7 | .021201 | -.071124 | -.073996 | .046269 | -.029042 | -.015171 |
| 8 | .022717 | -.067672 | -.078781 | .042345 | -.030659 | -.013405 |
| 9 | .026147 | -.063977 | -.080956 | .030090 | -.030369 | -.013120 |
| 10 | .029985 | -.065849 | -.082774 | .014515 | -.027432 | -.015168 |
| 11 | .034967 | -.069913 | -.083722 | -.001500 | -.022042 | -.017789 |
| 12 | .042970 | -.073942 | -.077835 | -.009407 | -.011471 | -.018713 |
| 13 | .053056 | -.077966 | -.069534 | -.004995 | .000531 | -.018156 |
| 14 | .061083 | -.076354 | -.061030 | .001006 | .014248 | -.018839 |
| 15 | .065285 | -.068140 | -.052312 | .002195 | .023454 | -.013514 |
| 16 | .061618 | -.053670 | -.041641 | .003115 | .027128 | -.001090 |
| 17 | .053345 | -.039917 | -.027510 | .007403 | .028227 | .010836 |
| 18 | .043102 | -.028443 | -.015084 | .012616 | .031248 | .015236 |
| 19 | .036170 | -.019596 | -.007258 | .017299 | .033843 | .016143 |
| 20 | .032347 | -.009854 | -.003498 | .016591 | .035646 | .019786 |
| 21 | .031946 | .002482 | .000739 | .016141 | .032689 | .026554 |
| 22 | .034057 | .010993 | .002711 | .018580 | .028461 | .028033 |
| 23 | .034331 | .013046 | -.002436 | .021009 | .020756 | .029898 |
| 24 | .027506 | .018261 | -.008471 | .020639 | .013796 | .032459 |
| 25 | .022661 | .029795 | -.013933 | .016940 | .010986 | .037650 |
| 26 | .015997 | .042217 | -.020263 | .011210 | .007894 | .042104 |
| 27 | .003707 | .051459 | -.010025 | .004613 | .001332 | .045546 |
| 28 | -.008692 | .060458 | -.015412 | -.002012 | -.007949 | .046707 |
| 29 | -.020359 | .064017 | -.008378 | -.007496 | -.009782 | .043505 |
| 30 | -.032294 | .063612 | -.005018 | -.009984 | -.008091 | .043192 |
| 31 | -.041291 | .059408 | -.003530 | -.019951 | -.012251 | .045467 |
| 32 | -.046810 | .051593 | -.000119 | -.031052 | -.015536 | .044389 |
| 33 | -.053757 | .045656 | .002315 | -.035532 | -.018015 | .043776 |
| 34 | -.058734 | .038342 | .004498 | -.033303 | -.025811 | .043369 |
| 35 | -.056698 | .034384 | .001932 | -.034663 | -.034322 | .042827 |
| 36 | -.054121 | .030302 | -.004907 | -.040729 | -.039787 | .038794 |
| 37 | -.055790 | .026601 | -.010297 | -.047417 | -.037915 | .033584 |
| 38 | -.059850 | .021011 | -.012970 | -.048487 | -.038691 | .023625 |
| 39 | -.060470 | .012264 | -.013711 | -.042216 | -.046142 | .009836 |
| 40 | -.056257 | .001093 | -.011946 | -.030355 | -.056652 | -.005802 |
| 41 | -.051149 | -.009154 | -.008370 | -.016045 | -.064246 | -.020210 |
| 42 | -.048266 | -.016593 | -.006684 | -.007321 | -.069381 | -.029986 |
| 43 | -.045616 | -.017604 | -.010597 | -.003863 | -.072416 | -.031179 |
| 44 | -.043873 | -.024772 | -.011735 | -.000659 | -.066237 | -.032984 |
| 45 | -.036090 | -.030069 | -.011267 | -.003439 | -.054379 | -.034980 |
| 46 | -.024743 | -.031921 | -.009748 | .002785 | -.041681 | -.037609 |
| 47 | -.013977 | -.036757 | -.010538 | -.002222 | .034842 | -.037019 |
| 48 | -.005799 | -.040473 | -.008924 | -.004601 | -.029947 | -.031366 |
| 49 | -.004245 | -.043795 | -.009686 | -.004239 | -.022999 | -.031996 |
| 50 | -.004946 | -.047308 | -.010934 | -.005346 | -.014824 | -.034785 |
| 51 | -.003603 | -.048703 | -.012444 | -.004565 | -.005240 | -.036768 |
| 52 | -.003232 | -.050543 | -.011975 | .000470 | -.003767 | -.038652 |
| 53 | .000981 | -.052284 | -.010783 | .009718 | .013524 | -.039634 |
| 54 | .011655 | -.052793 | -.012716 | .014525 | .022177 | -.043301 |
| 55 | .023526 | -.046127 | -.014640 | .016772 | .029117 | -.041508 |
| 56 | .031515 | -.034764 | -.014674 | .017935 | .031188 | -.036901 |
| 57 | .041821 | -.026400 | -.015099 | .015357 | .036938 | -.033644 |
| 58 | .053903 | -.019115 | -.015307 | .011537 | .042844 | -.032716 |
| 59 | .066299 | -.013216 | -.011174 | .016807 | .052580 | -.033533 |
| 60 | .073883 | -.001812 | -.004897 | .023523 | .065315 | -.034211 |

RUN NO 95A 46M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.61477 10E 00 | 0.59026 10E 00 | 0.40462 10E 00 | 0.14115 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .868843 | .829794 | .804130 | .893097 |
| 2 | .699242 | .610748 | .565890 | .748537 |
| 3 | .553781 | .442486 | .404835 | .626179 |
| 4 | .432031 | .311588 | .287744 | .519946 |
| 5 | .335789 | .219571 | .185122 | .427010 |
| 6 | .255010 | .145611 | .093297 | .348694 |
| 7 | .183415 | .079383 | .016257 | .279046 |
| 8 | .127467 | .029099 | -.044329 | .213216 |
| 9 | .072581 | -.011952 | -.081376 | .153066 |
| 10 | -.022524 | -.046526 | -.106841 | .099823 |
| 11 | -.030312 | -.073293 | -.127711 | .047716 |
| 12 | -.073488 | -.097565 | -.143522 | -.005571 |
| 13 | -.107406 | -.125192 | -.154738 | -.060997 |
| 14 | -.136533 | -.155331 | -.161582 | -.117011 |
| 15 | -.167915 | -.182090 | -.177841 | -.166601 |
| 16 | -.203597 | -.195794 | -.188498 | -.211216 |
| 17 | -.231544 | -.209608 | -.190386 | -.247321 |
| 18 | -.250985 | -.220753 | -.192080 | -.269930 |
| 19 | -.261641 | -.221153 | -.183365 | -.288922 |
| 20 | -.268200 | -.224359 | -.178465 | -.307881 |
| 21 | -.272367 | -.228163 | -.178306 | -.325450 |
| 22 | -.273923 | -.224912 | -.187046 | -.334588 |
| 23 | -.273407 | -.223636 | -.200605 | -.340853 |
| 24 | -.269846 | -.220667 | -.205901 | -.348151 |
| 25 | -.259215 | -.215584 | -.197046 | -.345603 |
| 26 | -.246126 | -.215168 | -.188823 | -.335460 |
| 27 | -.234452 | -.217123 | -.183366 | -.320476 |
| 28 | -.213939 | -.212882 | -.171037 | -.294726 |
| 29 | -.181139 | -.201917 | -.145123 | -.261751 |
| 30 | -.141963 | -.170707 | -.108278 | -.223121 |
| 31 | -.103627 | -.126569 | -.058505 | -.180853 |
| 32 | -.062726 | -.085267 | -.023255 | -.140516 |
| 33 | -.021993 | -.052511 | -.002839 | -.110870 |
| 34 | .007142 | -.033358 | .021350 | -.084667 |
| 35 | .023960 | -.018371 | .041971 | -.056726 |
| 36 | .032289 | .001970 | .056643 | -.035683 |
| 37 | .032706 | .019648 | .076763 | -.019865 |
| 38 | .031365 | .029527 | .098987 | -.006390 |
| 39 | .029866 | .031953 | .117483 | .005618 |
| 40 | .027911 | .027677 | .124560 | .014551 |
| 41 | .019113 | .025883 | .118103 | .018000 |
| 42 | .004767 | .026520 | .108786 | .019900 |
| 43 | -.010887 | .036381 | .104089 | .021987 |
| 44 | -.022412 | .050449 | .108818 | .022415 |
| 45 | -.023744 | .052780 | .112770 | .026503 |
| 46 | -.020757 | .048775 | .102505 | .036721 |
| 47 | -.023645 | .049024 | .078794 | .042949 |
| 48 | -.030535 | .042401 | .053650 | .044011 |
| 49 | -.036758 | .035590 | .027623 | .046736 |
| 50 | -.042344 | .039941 | .010181 | .052240 |
| 51 | -.037895 | .047680 | -.005644 | .058113 |
| 52 | -.030453 | .051444 | -.029562 | .061921 |
| 53 | -.026214 | .058923 | -.046598 | .064965 |
| 54 | -.020254 | .058207 | -.056732 | .060050 |
| 55 | -.018753 | .054739 | -.061517 | .047518 |
| 56 | -.018664 | .052495 | -.057328 | .035780 |
| 57 | -.021309 | .050703 | -.048637 | .029702 |
| 58 | -.024392 | .042622 | -.042505 | .028547 |
| 59 | -.024785 | .040533 | -.040821 | .028144 |
| 60 | -.021330 | .041767 | -.045209 | .025652 |

RUN NO 95A 46M 6-19-63 1446-1602(EST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-03 |
| 0 | .015638 | -.032299 | -.013301 | -.058069 | -.015989 | .369648 |
| 1 | .079732 | -.196252 | -.095527 | -.117481 | -.251380 | -.147650 |
| 2 | .087429 | -.227445 | -.109630 | -.018063 | -.344813 | -.921006 |
| 3 | .109278 | -.269782 | -.113740 | .092809 | -.282613 | .053566 |
| 4 | .088885 | -.176125 | -.067028 | .311282 | -.099738 | .579514 |
| 5 | .036817 | -.070799 | -.024073 | .234096 | -.025164 | -.184622 |
| 6 | -.013311 | -.057049 | -.017270 | .057053 | .007191 | -.464039 |
| 7-8 | .025639 | -.053366 | -.017825 | -.197868 | -.020132 | -.056545 |
| 9-11 | .031366 | -.040593 | -.010782 | -.181194 | -.014709 | .153620 |
| 12-15 | .011717 | -.019894 | -.004581 | -.049965 | -.007649 | -.070967 |
| 16-20 | -.002691 | -.003809 | -.003339 | -.045792 | .005711 | -.018101 |
| 21-27 | -.000797 | -.003341 | -.001310 | -.035537 | .002702 | -.013376 |
| 28-36 | .000624 | -.002942 | -.000647 | -.012111 | -.001518 | -.016300 |
| 37-47 | .000016 | -.000263 | -.000476 | -.020407 | .001501 | -.007900 |
| 48-60 | .000206 | -.000068 | -.000244 | -.004582 | .000102 | -.006798 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .064708 | -.047170 | -.257859 | .163875 | -.029559 | .101894 |
| 2 | .141229 | -.114770 | -.216551 | .539710 | .056283 | -.008387 |
| 3 | .091967 | -.174358 | -.218203 | .484073 | -.038734 | -.120790 |
| 4 | -.030202 | -.088956 | -.169917 | .128050 | -.134328 | -.069444 |
| 5 | -.034982 | -.006480 | -.098783 | .347693 | -.081881 | -.007801 |
| 6 | -.008741 | -.002164 | -.034158 | .634213 | -.044002 | -.020366 |
| 7-8 | -.011851 | -.009249 | .032030 | .345410 | .018097 | -.009250 |
| 9-11 | .009171 | -.012421 | -.006833 | .061939 | .017396 | -.027801 |
| 12-15 | -.009904 | .002946 | -.002365 | -.032834 | .000188 | -.017066 |
| 16-20 | .000366 | .002212 | -.007573 | .056913 | .006641 | -.008296 |
| 21-27 | .000392 | -.000379 | -.007764 | .005664 | .000665 | -.003723 |
| 28-36 | .000115 | -.000356 | -.003366 | .011078 | .000606 | -.000592 |
| 37-47 | .000096 | .000459 | -.004079 | .002374 | .000764 | -.000056 |
| 48-60 | .000539 | .000414 | -.000897 | -.000893 | .000524 | -.000164 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E-00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .010872 | .031858 | .023837 | .030087 |
| 1 | .088625 | .566626 | .273002 | .256351 |
| 2 | .106468 | .856935 | .474533 | .305231 |
| 3 | .113302 | .934715 | .613813 | .287948 |
| 4 | .071141 | .600240 | .417274 | .148477 |
| 5 | .034057 | .385464 | .285219 | .063772 |
| 6 | .029636 | .357994 | .294115 | .053879 |
| 7-8 | .024833 | .270624 | .216362 | .045855 |
| 9-11 | .015865 | .196549 | .127817 | .030687 |
| 12-15 | .009260 | .112589 | .072248 | .017043 |
| 16-20 | .005546 | .074202 | .053395 | .010491 |
| 21-27 | .003321 | .044155 | .039392 | .006045 |
| 28-36 | .001866 | .025173 | .023458 | .003863 |
| 37-47 | .001411 | .018472 | .013372 | .002474 |
| 48-60 | .000875 | .009835 | .008478 | .001485 |

RUN NO 95A 46M 6-19-63 1446-1602(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED COSPECTRUM COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.54478 10E 00 | 0.46118 10E 00 | 0.14282 10E 00 | 0.32143 10E 00 | 0.99545 10E-01 | 0.84270 10E-01 |
| 0 | .171825 | -.447971 | -.722818 | .009353 | -.186613 | .219193 |
| 1 | .115286 | -.290470 | -.535504 | -.043404 | -.139525 | .214264 |
| 2 | .038905 | -.174760 | -.345612 | .007712 | -.043600 | .188529 |
| 3 | .046497 | -.092516 | -.277007 | .027414 | -.027435 | .174243 |
| 4 | .001780 | -.051007 | -.189929 | .015533 | -.025798 | .090474 |
| 5 | -.008161 | .039183 | -.105078 | .056831 | -.043839 | .019293 |
| 6 | -.025842 | .068568 | -.041486 | .055779 | -.032294 | -.067340 |
| 7 | -.008767 | .046096 | .015115 | .015483 | -.000718 | -.030452 |
| 8 | -.014072 | .050318 | .089200 | -.013578 | .058102 | -.032835 |
| 9 | -.010083 | .038351 | .102423 | -.045112 | .046335 | -.024044 |
| 10 | .038559 | .075178 | .106307 | -.030969 | -.001483 | -.029475 |
| 11 | .046352 | .124267 | .126695 | -.022216 | -.025593 | -.057960 |
| 12 | -.003543 | .117285 | .188485 | -.016183 | .017600 | -.111933 |
| 13 | -.046938 | .121153 | .177969 | .004454 | .058614 | -.085760 |
| 14 | -.041400 | .062484 | .163498 | -.059738 | .022234 | -.056999 |
| 15 | -.045196 | .081024 | .175001 | -.093751 | .006512 | -.046097 |
| 16 | -.029890 | .063381 | .199845 | -.061514 | .025704 | -.100313 |
| 17 | -.016141 | .047108 | .184207 | .012927 | .063697 | -.104865 |
| 18 | -.004034 | .027769 | .179799 | .007951 | .082050 | -.097556 |
| 19 | -.031410 | .044819 | .223563 | .053961 | .040222 | -.081492 |
| 20 | -.041940 | .055167 | .220802 | -.023492 | .032867 | -.109363 |
| 21 | -.038612 | .019769 | .190046 | .020168 | .024890 | -.092132 |
| 22 | -.043961 | .005831 | .184845 | .014844 | .032144 | -.039050 |
| 23 | -.074184 | .033312 | .148130 | .079718 | .057624 | .003082 |
| 24 | -.044484 | .008529 | .098230 | .032622 | .040961 | .014046 |
| 25 | .009714 | -.001972 | .074275 | .059607 | .018389 | .014221 |
| 26 | -.005338 | .008473 | .045788 | .085077 | .033157 | .013904 |
| 27 | -.051169 | -.019763 | .019774 | .029226 | .063915 | .040835 |
| 28 | -.033195 | -.059719 | .002272 | -.002537 | .041018 | .071922 |
| 29 | .009531 | -.102699 | -.041344 | -.011720 | .002777 | .098643 |
| 30 | -.026188 | -.053969 | -.060075 | .016287 | .019103 | .086174 |

COSPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|---------|----------|----------|----------|----------|----------|
| | 10E-01 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 0 | .025839 | -.023515 | -.029841 | -.035144 | -.052250 | .060708 |
| 1 | .173314 | -.290146 | -.262613 | .093908 | -.399115 | .604339 |
| 2 | .120210 | -.339140 | -.227038 | .399923 | -.307598 | .577514 |
| 3 | .073519 | -.312433 | -.147677 | .185305 | -.194716 | .388799 |
| 4 | .078657 | -.210098 | -.093138 | -.377023 | -.157201 | .255266 |
| 5 | .097104 | -.149835 | -.064106 | -.391620 | -.139298 | .213215 |
| 6 | .108675 | -.141298 | -.039749 | -.272948 | -.075601 | .111042 |
| 7 | .074639 | -.140909 | -.035048 | -.313149 | -.028938 | .069470 |
| 8 | .002502 | -.103578 | -.027176 | -.319650 | -.053135 | .015185 |
| 9-11 | .027249 | -.026605 | -.023184 | .173729 | -.133710 | -.098722 |
| 12-14 | .016661 | -.052163 | -.020527 | -.064751 | -.057745 | .009945 |
| 15-21 | .026757 | -.034987 | -.015013 | .025303 | -.029842 | .010644 |
| 22-30 | .001436 | -.024202 | -.005457 | .192816 | .009974 | -.000607 |

RUN NO 95A 46M 6-19-63 1446-1602(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED QUADRATURE COVARIANCE

| M | U,V | U,W | U,T | V,W | V,T | W,T |
|----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 0.54478 10E 00 | 0.46118 10E 00 | 0.14282 10E 00 | 0.32143 10E 00 | 0.99545 10E-01 | 0.84270 10E-01 |
| 1 | .026290 | -.095475 | -.094669 | .013000 | -.045453 | -.002234 |
| 2 | .038166 | -.062565 | -.129006 | .002764 | -.030419 | .051079 |
| 3 | -.016480 | -.028153 | -.170012 | -.016318 | -.060748 | .060140 |
| 4 | -.038112 | -.066057 | -.183332 | -.015450 | -.073465 | .037763 |
| 5 | -.004703 | -.083550 | -.177226 | -.022782 | -.036400 | .006312 |
| 6 | .045811 | -.036212 | -.158931 | .038208 | .015354 | .012829 |
| 7 | .001380 | -.000198 | -.139052 | .009641 | .018706 | .029976 |
| 8 | -.017677 | .006173 | -.137265 | -.027247 | -.019844 | .059059 |
| 9 | -.041354 | .013579 | -.151926 | .008035 | -.045058 | .035877 |
| 10 | -.012270 | .070454 | -.163335 | .005405 | -.047904 | .084817 |
| 11 | -.021535 | -.005004 | -.159479 | -.064882 | -.007260 | .062865 |
| 12 | -.000100 | -.041722 | -.150822 | -.068381 | -.002327 | .040124 |
| 13 | -.026465 | -.058484 | -.132465 | -.046597 | -.019464 | .021742 |
| 14 | -.039789 | -.013674 | -.068089 | -.049776 | -.033792 | -.030053 |
| 15 | -.000071 | -.035791 | -.014616 | -.033164 | .012619 | -.062651 |
| 16 | .025250 | -.024900 | .020083 | .021388 | .034065 | -.051370 |
| 17 | .085910 | -.001382 | .038996 | .030145 | .052317 | -.020833 |
| 18 | .077208 | .031573 | .052599 | .000575 | .057271 | -.035612 |
| 19 | .001978 | .055041 | .012021 | .016842 | .007831 | .015747 |
| 20 | .018210 | .036353 | -.003189 | .025064 | .030112 | .034343 |
| 21 | .012123 | .015151 | .032257 | .024417 | .001891 | -.003573 |
| 22 | .026760 | .034895 | .042939 | .060684 | -.017559 | .010166 |
| 23 | .020475 | .055745 | .096625 | .135031 | -.026316 | .032320 |
| 24 | .037243 | .011350 | .121302 | .132976 | .017792 | -.004773 |
| 25 | .017925 | .046952 | .123476 | .053346 | .033884 | .010456 |
| 26 | -.032789 | .060642 | .128914 | -.027074 | .007280 | -.018744 |
| 27 | -.076569 | .029730 | .132787 | -.018417 | -.005453 | -.049603 |
| 28 | -.041324 | .021157 | .104533 | -.027094 | .000118 | -.045452 |
| 29 | -.023212 | -.052027 | .069853 | -.091170 | .000669 | -.048803 |
| 30 | -.016209 | -.063045 | .059783 | -.068157 | -.023996 | -.043124 |

QUADRATURE SPECTRUM

| K | U,V | U,W | U,T | V,W | V,T | W,T |
|-------|----------|----------|----------|----------|----------|----------|
| | 10E-02 | 10E-01 | 10E-01 | 10E-02 | 10E-02 | 10E-02 |
| 1 | .001584 | -.055218 | -.146481 | -.332338 | -.105588 | .172511 |
| 2 | -.373228 | -.069570 | -.122596 | -.313122 | -.154532 | .171719 |
| 3 | -.034340 | -.050655 | -.067129 | .230660 | -.130885 | .130899 |
| 4 | .504048 | -.072301 | -.021635 | .250872 | -.040653 | -.012793 |
| 5 | .155277 | -.111829 | -.018134 | -.158808 | -.071044 | -.059421 |
| 6 | -.245800 | -.074886 | -.032730 | -.261438 | -.150440 | .069169 |
| 7 | -.055819 | -.002030 | -.026853 | -.184446 | -.110059 | .133947 |
| 8 | .227301 | .021267 | -.000947 | .182295 | -.056983 | .063204 |
| 9-11 | .282255 | -.020452 | -.000232 | .076225 | .017386 | .003889 |
| 12-14 | .489591 | -.026704 | -.002070 | .176349 | .025596 | -.037907 |
| 15-21 | -.110946 | -.033653 | -.003008 | .001639 | -.039785 | -.026496 |
| 22-30 | -.110348 | -.005745 | -.002150 | -.045457 | -.015553 | -.016169 |

RUN NO 95A 46M 6-19-63 1446-1602(EST)
 301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

NORMALIZED AUTOCOVARIANCE

| M | U | V | W | T |
|----|-------------------|-------------------|-------------------|-------------------|
| | 0.78164 10E 00 | 0.37969 10E 00 | 0.27211 10E 00 | 0.26098 10E-01 |
| 0 | 1.000000 | 1.000000 | 1.000000 | 1.000000 |
| 1 | .613810 | .282826 | .267121 | .724731 |
| 2 | .323008 | -.070147 | .078894 | .458746 |
| 3 | .209298 | -.135679 | .005117 | .341147 |
| 4 | .111306 | -.034602 | .100642 | .277827 |
| 5 | .003097 | .007467 | -.069963 | .192236 |
| 6 | -.024148 | .020897 | -.131993 | .111592 |
| 7 | -.020035 | .015443 | -.113081 | .019285 |
| 8 | -.063026 | -.106495 | .002314 | -.084220 |
| 9 | -.082970 | -.159749 | -.116740 | -.117385 |
| 10 | -.113616 | -.079666 | -.167952 | -.138598 |
| 11 | -.132825 | .002519 | -.164103 | -.182308 |
| 12 | -.219988 | -.051021 | -.048337 | -.236890 |
| 13 | -.258222 | -.103647 | -.132488 | -.239487 |
| 14 | -.228532 | -.144909 | -.117843 | -.248651 |
| 15 | -.178315 | -.025108 | -.084291 | -.283579 |
| 16 | -.170462 | .024106 | -.002181 | -.283198 |
| 17 | -.174914 | .037982 | .003029 | -.263455 |
| 18 | -.130871 | .000446 | .005265 | -.275240 |
| 19 | -.175386 | -.010816 | -.018971 | -.282762 |
| 20 | -.182609 | -.066395 | .011239 | -.255621 |
| 21 | -.139586 | .006914 | .024601 | -.260574 |
| 22 | -.133411 | .044005 | -.040918 | -.298873 |
| 23 | -.118868 | -.001189 | .049894 | -.277243 |
| 24 | -.077246 | .003584 | .065688 | -.204726 |
| 25 | -.064079 | .007565 | -.028620 | -.147777 |
| 26 | -.053222 | -.018289 | .002082 | -.066189 |
| 27 | .005639 | -.043725 | -.020235 | -.025856 |
| 28 | .050897 | -.071084 | .095180 | .010262 |
| 29 | .081566 | .055899 | .065757 | .040134 |
| 30 | .063030 | .096062 | -.009817 | .075495 |

POWER SPECTRUM

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E-01 | 10E-01 | 10E-02 |
| 0 | .013700 | .017388 | .010936 | .082840 |
| 1 | .134532 | .163691 | .149949 | .691101 |
| 2 | .128141 | .209949 | .216955 | .572062 |
| 3 | .093917 | .243063 | .249671 | .347464 |
| 4 | .060010 | .191718 | .182985 | .199134 |
| 5 | .048154 | .148373 | .128174 | .131393 |
| 6 | .048197 | .160851 | .124288 | .096769 |
| 7 | .048380 | .196151 | .130232 | .086604 |
| 8 | .034966 | .201479 | .111751 | .070091 |
| 9-11 | .021785 | .272294 | .086349 | .077992 |
| 12-14 | .017471 | .157236 | .110741 | .060970 |
| 15-21 | .016809 | .135029 | .101165 | .033794 |
| 22-30 | .009411 | .115923 | .101888 | .017853 |

RUN NO 95A 15W 6-19-63 1446-1602(EST)
 RUN NO 95A 46W 6-19-63 1446-1602(FST)
 61 POINT RUNNING MEAN, NO BLOCK AVERAGING

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .512861 | .252280 | .499969 | .511294 |
| 1 | .514197 | .537007 | .369384 | .474649 |
| 2 | .459684 | .572734 | .373067 | .417904 |
| 3 | .337625 | .539014 | .364247 | .311842 |
| 4 | .145324 | .422630 | .246738 | .108342 |
| 5 | .123404 | .304719 | .092233 | .058159 |
| 6 | .069824 | .208281 | .090518 | .083706 |
| 7-8 | .045601 | .179254 | .072028 | .077104 |
| 9-11 | .126791 | .227447 | .087222 | .091559 |
| 12-15 | .113926 | .115691 | .094263 | .072967 |
| 16-20 | .062380 | .133493 | .141754 | .087738 |
| 21-27 | .093844 | .104718 | .107758 | .102176 |
| 28-36 | .066187 | .118112 | .089595 | .128819 |
| 37-47 | .129664 | .070691 | .109650 | .155982 |
| 48-60 | .074465 | .083009 | .099177 | .082971 |

301 POINT RUNNING MEAN, 10 POINT BLOCK AVERAGE

COHERENCE WITH QUADRATURE

| K | U | V | W | T |
|-------|---------|---------|---------|---------|
| | 10E 00 | 10E 00 | 10E 00 | 10E 00 |
| 0 | .895316 | .036972 | .310221 | .959578 |
| 1 | .863060 | .140934 | .507928 | .911763 |
| 2 | .747650 | .353942 | .544327 | .828738 |
| 3 | .592841 | .559537 | .548310 | .690009 |
| 4 | .611082 | .634567 | .565929 | .654219 |
| 5 | .637684 | .543836 | .557072 | .568917 |
| 6 | .549448 | .465719 | .520621 | .412105 |
| 7 | .464506 | .472720 | .463280 | .472866 |
| 8 | .446133 | .493790 | .365523 | .537683 |
| 9-11 | .601190 | .578552 | .228400 | .524341 |
| 12-14 | .396167 | .606900 | .456828 | .410181 |
| 15-21 | .242890 | .422331 | .354679 | .323638 |
| 22-30 | .178024 | .248444 | .239104 | .185651 |

REFERENCES

- Cramer, H.E., 1959: Measurements of turbulence structure near the ground within the frequency range from 0.5 to 0.1 cycles sec⁻¹. Advances in Geophysics. New York, Academic Press, 6, 75-96.
- Cramer, H.E., F.A. Record, and J.E. Tillman, 1962: Studies of the spectra of the vertical fluxes of momentum, heat and moisture in the atmospheric boundary layer. M.I.T. Dept. of Meteor., Final Report under Contract No. DA-36-039-SC-80209, 112 pp.
- _____, 1967: M.I.T. Dept. of Meteor., Final Report under Grant No. DA-AMC-36-039-64-G1 (to be published).
- Cramer, H.E., F.A. Record, J.E. Tillman, and H.C. Vaughan, 1961: Studies of the spectra of the vertical fluxes of momentum, heat and moisture in the atmospheric boundary layer. M.I.T. Dept. of Meteor., Annual Report under Contract No. DA-36-039-SC-80209, 130 pp.
- Blackman, R.B., and J.W. Tukey, 1958: The measurement of power spectra from the point of view of communications engineering. Bell Sys. Tech. J., 37, 185-288 and 485-569.
- Pasquill, F., 1962: Atmospheric Diffusion. D. Van Nostrand Co., Ltd., London, 297 pp.

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

| | |
|---|--|
| 1. ORIGINATING ACTIVITY (Corporate author) Meteorology Department Massachusetts Institute of Technology Cambridge, Massachusetts | 2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED |
| | 2b. GROUP |

| |
|---|
| 3. REPORT TITLE ROUND HILL TURBULENCE MEASUREMENTS - VOLUME I EXPERIMENTAL TECHNIQUES, DATA-PROCESSING PROCEDURES, AND DATA TABULATIONS FOR RUNS 87A THROUGH 95A |
|---|

| |
|---|
| 4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Volume I of Five Volumes |
|---|

| |
|---|
| 5. AUTHOR(S) (First name, middle initial, last name) H. E. Cramer, F. A. Record, and J. E. Tillman |
|---|

| | | |
|---------------------------------|-------------------------------|----------------------|
| 6. REPORT DATE December 1966 | 7a. TOTAL NO. OF PAGES 246 | 7b. NO. OF REFS 6 |
|---------------------------------|-------------------------------|----------------------|

| | |
|---|---|
| 8a. CONTRACT OR GRANT NO. Grant DA-AMC-28-043-65-G10 | 9a. ORIGINATOR'S REPORT NUMBER(S) |
| b. PROJECT NO. DA Task 1VO-14501-B53A-08 | 9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report) ECOM-65-G10 |
| c. | |
| d. | |

| |
|---|
| 10. DISTRIBUTION STATEMENT Distribution of this document is unlimited. |
|---|

| | |
|-------------------------|--|
| 11. SUPPLEMENTARY NOTES | 12. SPONSORING MILITARY ACTIVITY U.S. Army Electronics Command Atmospheric Sciences Laboratory, Research Division, Fort Huachuca, Arizona |
|-------------------------|--|

| |
|---|
| 13. ABSTRACT <p>This volume describes the experimental techniques and the data-processing procedures employed in a program of turbulent structure measurements carried out at the Round Hill Field Station. It also contains data summaries for 12 of the 76 field experiments selected for inclusion in this report. The field site and the experimental procedures are described in Section I. Sections II and III respectively contain descriptions of the data-acquisition system and the data-processing procedures. Section IV contains data summaries for Runs 87A through 95A; data summaries for the remaining field experiments are presented in Volumes II, III, IV, and V.</p> |
|---|

UNCLASSIFIED

Security Classification

| 14. KEY WORDS | LINK A | | LINK B | | LINK C | |
|-----------------------|--------|----|--------|----|--------|----|
| | ROLE | WT | ROLE | WT | ROLE | WT |
| Data summaries | | | | | | |
| Vertical profiles | | | | | | |
| Turbulence statistics | | | | | | |

UNCLASSIFIED

Security Classification